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SAFETY AND SECURITY OF LIQUIFIED NATURAL GAS TERMINALS AND THEIR IMPACT ON PORT OPERATIONS

(110–31)

FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON
COAST GUARD AND MARITIME TRANSPORTATION

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

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U.S. House of Representatives
Committee on Transportation and Infrastructure
Washington, DC 20515

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April 20, 2007

SUMMARY OF SUBJECT MATTER

TO: Members of the Subcommittee on Coast Guard and Maritime Transportation

FROM: Subcommittee on Coast Guard and Maritime Transportation Staff

SUBJECT: Field hearing on safety and security of Liquefied Natural Gas (LNG) terminals and their impact on port operations in Baltimore

PURPOSE OF THE HEARING

On April 23, 2007 at 10:00 a.m. the Subcommittee will meet in the Ceremonial Courtroom at the University of Maryland Law School, on 500 West Baltimore Street, Baltimore, MD, to conduct a hearing on the safety and security of Liquefied Natural Gas (LNG) terminals and their impact on port operations. The hearing will also examine the proposed AES Sparrows Point LNG terminal at Sparrows Point in the Port of Baltimore to assess its potential impact on the safety and security of the City of Baltimore as well as on the operations of the Port of Baltimore.

BACKGROUND

Shipping Liquefied Natural Gas (LNG)

When natural gas is cooled to a temperature of less than 260 degrees Fahrenheit, it becomes a liquid. As a liquid, natural gas occupies only 1/600th of the volume it occupies as a gas – so a larger quantity can be stored in a smaller space.

LNG is shipped as a liquid. LNG shipping began in 1959. Historically, less than 1 percent of the total amount of natural gas utilized in the United States was imported – because domestic production capacities yielded cheap gas in large quantities. However, as the use of natural gas in the United States has increased (due to low prices in the 1980s and 1990s), domestic production capacity has not kept pace with demand and prices have risen – making imported gas competitive with domestically produced gas.

On-Shore Facilities

By definition, a facility is considered to be on-shore if it is located within 3 miles of shore (that is, in the waters controlled by coastal states), except off Texas and the west coast of Florida where a facility is considered on-shore if it is within 3 leagues (approximately 9 miles).

At the present time, there are only 5 active, on-shore LNG import facilities in the United States:

- Everett, Massachusetts
- Cove Point, Maryland
- Lake Charles, Louisiana
- Elba Island, Georgia
- Penuelas, Puerto Rico

In some cases, these LNG terminals are not physically on land (as at Cove Point, where the pier at which ships actually dock is 1 ¼ miles from shore).

The process governing the siting of off-shore facilities involves different agencies from the process pertaining to on-shore facilities. The remainder of this memo will examine the siting of on-shore facilities.

Agencies and Entities Regulating LNG Terminal Sitings and Operations

A new on-shore LNG facility needs to obtain approximately 100 permits and approvals from a variety of federal, state, and local agencies before the project can begin construction. A brief overview of some of the main regulatory requirements governing the siting of on-shore LNG facilities is provided below.

In general terms, the Department of Transportation (DOT) is responsible for setting safety standards for on-shore LNG terminals (due to its regulatory authority over pipelines) -- including the siting, construction, and operation of these facilities. DOT does not, however, approve or deny specific siting applications – that authority resides with the Federal Energy Regulatory Commission (FERC).

Federal regulations do not contain requirements for remote siting of LNG terminals. However, the Pipeline Safety Act requires DOT to consider the need to encourage the remote siting of LNG terminals. The Governmental Accountability Office (GAO) testified to Congress in 1979 that the public could best be protected by placing LNG terminals away from population centers.

FERC enforces the standards set by DOT – but also has the authority (recognized through a memorandum of understanding between FERC and DOT) to set more stringent standards for facilities when these are warranted.

The Coast Guard participates in reviewing applications as a cooperating agency. Its specific role is to conduct a Waterway Suitability Assessment (WSA), which assesses the potential impact of an LNG terminal on existing maritime operations in the vicinity of the proposed terminal as well as the security risks that the proposed siting may pose. The WSA also evaluates the potential thermal effects of a pool fire that could occur at a terminal site.

The development of the WSA runs concomitantly with the assessments conducted by FERC (including the Environmental Impact Statement). Upon receipt of a WSA, the Coast Guard submits it to review by a committee of stakeholders from the port at which the terminal is proposed to be located and may even conduct public meetings to solicit public comments on the WSA. Upon conclusion of the review, the Coast Guard reaches a preliminary determination about the results of the WSA and communicates its findings to FERC in a document called the Waterway Suitability Report (WSR).

The Army Corps of Engineers maintains its responsibility for any dredging required to provide suitable access channels needed by the terminal.

Other agencies are involved in specific aspects of the regulation of issues associated with terminal siting, including the Department of Commerce/National Oceanic and Atmospheric Administration (review and consultation under Endangered Species Act), Department of the Interior (review/consultation under Endangered Species Act), and the Environmental Protection Agency (permitting under the Clean Air Act and process waste water permits etc.).

The authority to approve the siting of a facility rests solely with the Federal Government. However, before any LNG facility can be constructed it must have any appropriate state issued Clean Water Act Section 401 certification of compliance with states water quality programs, and Clean Air Act Section 502 permits to operate a source of air pollution. In addition, any federal actions affecting a state's coastal zone, including the issuance of federal permits, must be consistent with the state's Federal coastal zone management plan if the state has such a plan. Maryland has an approved state coastal zone management plan.

Safety Concerns Surrounding On-Shore LNG Terminals

Several safety concerns regarding on-shore LNG terminals are discussed below.

Safety Exclusion Zones: Federal safety regulations require LNG terminals to be surrounded by "exclusion zones" designed to protect neighboring sites from fires and/or flammable cloud vapors. Critics argue that current regulations produce exclusion zones that are too small – and that siting plans may not adequately anticipate the results of terrorist acts or other accidents. A report recently released by the Governmental Accountability Office examined six studies on the potential effect of a fire resulting from an LNG spill and found that they produced varying results – in large part because there is a lack of data on large spills from actual events and because the various studies utilized different modeling assumptions.

Safety Hazards in the Marine Environment: There are several concerns pertaining to potential LNG spills in water. First, if a spill occurs near a source of ignition, the LNG will burn, even if the spill is on water. As the LNG spreads across the water, the LNG will continue to burn creating what is known as a "pool fire." Pool fires cannot be contained and will burn until all LNG is consumed in the fire. Further, such fires burn hotter than regular gas fires – and may emit thermal radiation that could burn people nearby. Second, LNG spilled on water is theoretically capable of re-gasifying almost instantly – creating a vapor cloud that may also explode if it finds a source of ignition. Importantly, however, unlike gas, LNG dissipates completely and leaves no residue – so environmental damage will result only from the fires associated with LNG emissions.

Role of the Coast Guard in Securing LNG Tankers

LNG tankers in use today are double-hulled. The Coast Guard indicates that LNG tankers have carried more than 40,000 LNG shipments since international shipping began in 1959 and there has never been a breach of a ship's cargo tanks or a major LNG spill. The Coast Guard further reports that there have been approximately 30 LNG tanker safety incidents (including leaks as well as groundings and collisions) through the year 2002. Of these incidents, 12 involved small spills but none ignited.

Currently, there are more than 200 LNG tankers in operation and approximately 100 additional tankers are under construction. None fly the flag of the United States.

LNG tankers calling on the United States are required to submit detailed vessel plans to the Coast Guard's Marine Safety Center (MSC) before they may enter United States waters. MSC conducts on-site verifications to ensure that the tankers meet applicable construction standards and then issues a Certificate of Compliance valid for two years.

Like all ships calling on the United States, LNG tankers are required to provide notice of their impending arrival 96 hours before reaching a U.S. port. When an LNG tanker is transiting a port or the approaches to a port, the Coast Guard escorts the tanker and enforces special safety zones around the vessel to prevent other vessels from approaching it. The Coast Guard also reports that it will board LNG vessels at-sea prior to their arrival.

Safety History of Existing LNG Terminals

In 1944 a storage tank that was not outfitted with an impoundment dike failed at an LNG facility in Cleveland, Ohio, resulting in a spill and a subsequent explosion that killed 128 people. In January 2004, an accident at a terminal in Algeria killed more than 100 people.

In 1979, an accident at the Cove Point LNG facility in Maryland resulted in several fatalities and the terminal ceased operations until recent years. Cove Point is a unique terminal because ships dock to a pier located 1 ¼ mile off-shore. The terminal is then connected to shore by a tunnel constructed using rectangular blocks sunk directly into the water. These tunnels include electrical conduits. The accident occurred when gas leaked on the site and was ignited by a spark. Regulatory changes have since been made to ensure the safety of facilities of similar design.

Increased Interest in Developing LNG Terminals

There are approximately 40 LNG terminal projects that are in some phase of seeking permits from FERC (for on-shore sitings) or from the Coast Guard and the Maritime Administration (for off-shore sitings). The majority of the applications are for on-shore facilities. Recent interest in building LNG terminals springs not only from the rising cost of natural gas but also from recent legal/regulatory changes intended to streamline the permitting process.

Proposed Sparrows Point Project in Baltimore

On January 8, 2007, AES Sparrows Point LNG, LLC, filed a formal application with FERC to construct and operate a new LNG import, storage, and regasification plant at Sparrows Point in Baltimore. The pre-file process for this facility began in March 2006. The project is intended to meet growing demands for natural gas in the mid-Atlantic region, which currently has limited supply networks. The Sparrows Point facility would be located on 80 acres of a 175-acre parcel of land in Baltimore County.

The facility would be comprised of a marine terminal, three on-shore storage tanks (each of which would be 180-feet high and 265-feet in diameter and capable of holding 160,000 cubic of gas), the equipment to convert LNG to a gaseous state (including a closed-loop glycol vaporization system), and associated out-buildings.

The marine terminal intended to serve the site will be located on the Patapsco River off of the Brewerton Channel. The terminal will be designed to serve tankers up to 1,000 feet in length with a carrying capacity ranging from 127,500 cubic meters up to 217,000 cubic meters. The LNG will be unloaded in liquid form through three 16-inch stainless steel unload arms. It takes approximately 12 hours to unload an LNG tanker.

According to documents compiled by the AES firm, the facility is designed to vaporize and store 1.5 billion cubic feet per day and could be expanded to handle up to 2.25 billion cubic feet per day. Gas from this facility will interconnect existing pipelines near Eagle, Pennsylvania – requiring the construction of 85 new miles of pipeline.

The Sparrows Point site is located at the eastern end of the Port of Baltimore in Baltimore County. The site is near residential areas and local and state officials have expressed concerns that this site poses significant safety and security risks to those living not only near the site but throughout the metropolitan area of Baltimore. Additionally, a ship requires approximately 8 to 10 hours to travel from the mouth of the Chesapeake Bay to the Port of Baltimore and must pass under the Chesapeake Bay Bridge to access the terminal. Concerns have also been raised that these ships may not only disrupt port traffic (due to their unique security requirements) but could potentially present a terror target during transit, particularly in the vicinity of the Bay bridge.

Further, access to the facility would require deepening and widening the existing marine channel to a depth of 44 feet and a width of 650 feet. This dredging is estimated to produce as much as 4 million cubic yards of dredged material; 2.6 million cubic yards will be disposed of at sites yet to be determined. The material proposed to be dredged far exceeds the placement capacity of the sites currently operated by the Maryland Port Administration.

State Of Maryland Opposed to Sparrows Point Project

In a document submitted to FERC dated February 7, 2007, and developed in response to the Sparrows Point proposal, the State of Maryland expressed its strong opposition to the proposed LNG terminal – citing safety and security concerns as well as a variety of environmental and economic concerns.

Specifically, the State cites the following safety and security concerns:

- The proposed terminal does not meet the State's concept of remote siting – and will be located on a compressed site within a highly populated area. Further, the State is concerned about other issues on the site, including equipment orientation and tank containment.
- The terminal will be located one-mile from the second largest blast furnace in the United States, located at the Mittal Steel plant.
- A proposed ethanol facility to be located north of the Sparrows Point terminal and that could be operational in 12 months could provide an additional ignition source.
- Also, the State is very concerned about the strain that dredging needed to accommodate the terminal may cause on current State placement capacity for dredged material – and is concerned that the siting of an LNG terminal may not be the best use of this land within the Port from an economic development perspective.
- Finally, the State has expressed concerns about the security of the pipeline that would be needed to carry gas from the Sparrows Point facility to other pipeline networks.

Next Steps in Development of Sparrows Point Project

The WSA for the Sparrows Point project has been submitted for review and the Coast Guard's WSR is expected in April 2007.

The Draft Environmental Impact Statement is expected to be completed approximately July 1, 2007. Upon its completion, the public will be given 45 days to respond to its findings.

A final decision on the AES Sparrows Point application is expected from FERC by December 2007.

WITNESSES

PANEL I

The Honorable Barbara Mikulski
United States Senator
Maryland

The Honorable Martin O'Malley
Governor
Maryland

Mr. James T. Smith, Jr.
County Executive
Baltimore County, Maryland

PANEL II

Rear Admiral Brian Salerno
Director of Inspection and Compliance
U.S. Coast Guard

Captain Brian D. Kelley
United States Coast Guard
Baltimore Sector

Mr. Richard Hoffmann
Director
Gas, Environment, and Engineering
Federal Energy Regulatory Commission

PANEL III

Mr. Kent Morton
Project Director
AES Corporation

Mr. William Doyle
Deputy General Counsel
Marine Engineers' Beneficial Association

Mr. Dunbar Brooks
Chairman
Turner Station Development Corporation

Ms. Sharon Beazley
Private Citizen

HEARING ON SAFETY AND SECURITY OF LIQUIFIED NATURAL GAS AND THE IMPACT ON PORT OPERATIONS

Monday, April 23, 2007

House of Representatives
Committee on Transportation and Infrastructure
Subcommittee on Coast Guard and Maritime Transportation
Baltimore, MD.

The Subcommittee met, pursuant to call, at 10:00 a.m., in the Ceremonial Courtroom, University of Maryland School of Law, 500 West Baltimore Street, Baltimore, Maryland, Hon. Elijah E. Cummings [Chairman of the Subcommittee] presiding.

Present: Representatives Cummings, LaTourette and Gilchrest.

Also Present: Representative Ruppersberger and Sarbanes.

Mr. Cummings. Good morning, everyone. This hearing is called to order.

Before we begin, I just want to recognize that we lost—Congress lost a giant in our midst. She served on the Transportation Committee, Ms. Juanita Millender-McDonald from California passed away yesterday after suffering from cancer. And, Mr. LaTourette and I knew her very well. As a matter of fact, she came into Congress with me, I mean, she came in three weeks before I did, and so we were, I think, some of the few folk that came in 1996, because we came in special elections. We will miss her, and I just thought it would be appropriate that we start off this hearing by recognizing this truly, truly great lady.

Before we begin, I ask unanimous consent that Congressman Ruppersberger and Congressman Sarbanes may join the Subcommittee today and participate in this hearing, and without objection it is so ordered.

What we are going to do today, to the Committee Members, for the Committee Members, is I will make an opening statement and Mr. LaTourette will make an opening statement. Then we will be going to Senator Mikulski. However, if the Governor arrives by that time, then we'll hear from the Governor, and then, of course, we'll go to County Executive Smith. It's my understanding that the Governor has some time constraints, and so that's why we want to proceed in that manner.

It's a privilege to convene the Subcommittee on the Coast Guard and Maritime Transportation today here in Baltimore, in the 7th Congressional District of Maryland, which it is my honor to represent.

I also thank Dean Rothenburg of the University for hosting us here at the University of Maryland Law School, and I see that President Ramsey is also here of the University of Maryland. Thank you both for being here, and thank you for opening the doors to this great law school, which so happens to be the law school that I graduated from.

I also welcome the Subcommittee Members to Baltimore, and I especially thank the Ranking Member, Mr. LaTourette, for joining us today. Mr. LaTourette is from Ohio.

I also welcome Congressman Ruppersberger and Congressman Sarbanes, who I just saw about to enter the room, who will sit with the Subcommittee, and Senator Mikulski, Governor O'Malley, and County Executive Jim Smith, who will testify before the Subcommittee as we consider a matter of deep concern to Baltimore and, indeed, to the State of Maryland, and, indeed, to the Nation, the safety and security of LNG terminals, including the proposed LNG development at Sparrows Point.

This hearing is the first of two hearings that the Subcommittee will hold to examine proposed growth in LNG terminal sitings, and their impact on the safety and security of neighboring communities on port operations and on the operating capacity of the United States Coast Guard.

Today's hearing will be followed by a hearing on the proposed Broadwater Terminal in Long Island Sound on May 7th, up in New York.

While these hearings will examine two specific LNG projects, the hearings, indeed, have national implications. The United States is taking momentous steps with our decision to begin siting additional LNG terminals.

Aside from the consequences that expanded reliance on energy imports bring, we need to be sure that we are not rushing ahead with the construction of LNG facilities which constitute obvious terror risk before all the elements are in place to ensure the security and safety of the communities into which these unwanted neighbors move.

Let me begin with a brief explanation of what Liquid Natural Gas, called LNG, is. LNG is natural gas that has been super cooled to become a liquid. Natural gas carried on ships is transported in this liquid form. Because LNG is so cold, everything else around it is, by definition, much hotter than it is. When LNG hits the air or water, it becomes a vapor heavier than air. If it finds a source of ignition it will burn and it can even burn on water in a phenomenon known as pool fire. There are only five on-shore LNG import facilities in operation in the United States at the present time.

The Energy Information Administration reports that imported LNG accounts for only 2 percent of natural gas currently used in the United States. However, there has been a steep rise in applications for new LNG terminal permits, responding both to increased demand for and higher prices of natural gas and to changes made in Federal regulations in 2005 by the Bush Administration and Republican-controlled Congress to ease LNG terminal sitings, in part by preempting the efforts of state and local governments to regulate these sitings.

There are now some 40 new projects that are in various stages of the process of applying for construction and operating permits. By the end of 2006, 12 projects had been approved for construction. The Energy Information Administration now estimates that by the year 2030 imported LNG could account for as much as 20 percent of all natural gas consumed in the United States.

The willingness of the Federal Energy Regulatory Commission, also known as FERC, to consider sitings in populated areas like Baltimore, is of deep concern to me, because an attack on such a facility could produce terrible consequences.

As I've already mentioned, LNG that leaks into the air can create a vapor cloud. If ignited, it will feed a fire that can burn so hot it may emit thermal radiation that could burn even those who are not directly in the fire. There is simply no reason to place these facilities in any location that could expose nearby residents to such risk.

A key link in the safety net that we must build around LNG terminals is the United States Coast Guard, which conducts waterway suitability assessments as part of the evaluation of new terminal projects. It is imperative that thee assessments evaluate projects against a worse case scenario. As unlikely as such scenarios may be, before September 11, 2001 the terrible events we watched unfold on that day were considered impossible.

Let me also clear that I believe that state and local governments must, must be key players in all aspects of the assessment of the proposed LNG terminal projects, including the conduct of waterway suitability assessments.

Once terminals are built, the Coast Guard ensures security and safety in the ports in which the terminals are located and provides security escorts to LNG tanker ships. In fact, the security of the tankers is just as important as the security of the terminals, because they are floating targets. They bring risks near every community they pass.

Our Subcommittee, which oversees all aspects of the Coast Guard operations, is deeply concerned that an increase in the number of LNG terminals will stretch a Coast Guard already strained by the new homeland security responsibilities it assumed after 9/11, as well as by the need to continue its traditional missions of search and rescue and environmental protection.

The Coast Guard, ladies and gentlemen, is our thin blue line at sea. It is our Subcommittee's job to ensure it is an unbreakable line, because it is all that stands between our homeland and the risks that all maritime operations, including LNG shipping, can bring to it.

Before we commit the Coast Guard to providing the resources needed to ensure the security and safety of the new LNG operations, we need to know what we are making commitments to with regard to the Coast Guard, and whether they can keep those commitments.

And, with that, I recognize my Ranking Member, the distinguished gentleman from the great State of Ohio, who has just been a real partner in making sure that we have bipartisan efforts in our Subcommittee and in our overall Committee, Mr. LaTourette.

Mr. LATOURETTE. Mr. Chairman, thank you very much, and I appreciate the invitation to be here in your hometown. When I accepted the invitation, I didn't know we were also coming to your alma mater, so I appreciate that as well, and my thanks to the University of Maryland. When I went to law school, the room wasn't as nice, this is a very nice room.

Mr. CUMMINGS. Well, when I went to law school it wasn't this nice either.

Mr. LATOURETTE. I appreciate this hearing to review the safety and security of Liquified Natural Gas transportation and reception facilities. I want to echo your remarks, first of all, about Congresswoman Juanita Millender-McDonald, elected in a special election in 1996. She was my seat mate for ten years, most recently served as the Chairman of the House Administration Committee, known as the Mayor of Capitol Hill. There wasn't a finer Member of Congress or human being that I've run across in my tenure, and I know all of our thoughts are with her husband Jim and their children and grandchildren today. She will be truly, truly missed.

I also want to welcome Wayne Gilchrest, seated to my left, the Congressman who represents the Eastern Shore of Maryland, and thank him for coming to today's hearing. I knew this was an important hearing when we have Senator Mikulski, and the Governor, and the County Executive, and Congressman Sarbanes, and Congressman Ruppersberger, that really makes it an important hearing, and so I appreciate that very much.

Natural gas accounts for nearly one quarter of the energy that's consumed in the United States, and a safe and abundant supply is vital to our future energy needs and to support our national economy. As the United States looks to strategies to diversify and expand energy resources, natural gas is a promising alternative fuel source that burns cleanly and produces fewer pollutants, is easy to transport, and has a variety of uses. In the past, the United States has been able to meet natural gas demands with domestically produced sources. However, as natural gas consumption is increased, we are now forced to look to international sources to meet domestic demands.

As a result, the Government has recently received numerous applications for the approval of proposed LNG terminals and storage facilities located both on shore and in U.S. waters. The Federal Energy Regulatory Commission, FERC, is required to review each proposal, including the safety and security efforts and effects that a proposed facility may have on a local area. The Coast Guard is required to review the effects that a proposed facility may have on maritime transportation in and out of the port, as well as safety and security concerns that may arise in the maritime environment.

LNG shippers and the natural gas industry have made significant improvements in the safety and security of tank vessels, reception facilities, storage tanks, and LNG pipelines. However, safety and security must be the Government's top-most concern when reviewing applications for new LNG projects.

I look forward to hearing the testimony from today's witnesses regarding the efforts that the Government and industry have made to enhance safety and security through each step of the process. I also look forward to hearing more about the specific plans and concerns regarding the facility that is proposed to be built in the Port of Baltimore.

Mr. Chairman, again, thank you for the invitation and your warm welcome, and I look forward to the hearing.

Mr. CUMMINGS. Thank you very much, Mr. LaTourette.

To the Members, to Mr. Sarbanes, what we have decided to do was to, because the Governor has certain restraints, time restraints, we want to hear from the Governor, then we will hear from Ms. Mikulski, Senator Mikulski, and Jim Smith, County Executive Jim Smith, and then what we'll do is, any opening statements we might have will be a part of the question and answer period. We are extending the question and answer period for seven—from five to seven minutes. Normally, it's five minutes, we'll do seven.

We are very pleased to have the Governor of the great State of Maryland here with us, and thank you, Mr. Governor, and, Governor O'Malley.

STATEMENT OF THE HONORABLE MARTIN O'MALLEY, GOVERNOR, MARYLAND; THE HONORABLE BARBARA MIKULSKI, U.S. SENATOR, MARYLAND; JAMES T. SMITH, JR., COUNTY EXECUTIVE, BALTIMORE COUNTY, MARYLAND

Governor O'MALLEY. Mr. Chairman, it sounds so good to be able to call you Mr. Chairman.

Mr. CUMMINGS. It sounds so good to call you Governor.

Governor O'MALLEY. Ranking Member LaTourette and Members of the Committee, I appreciate the opportunity to appear before you, and on behalf of the citizens of Maryland, with our Senior Senator, Senator Mikulski, and my colleague in Government, County Executive Jim Smith.

We really appreciate the Committee's visiting Maryland to discuss this issue, FERC's decision to allow a Liquified Natural Gas facility at Sparrows Point is of critical concern to everyone in our State.

I wanted to begin by just making a couple of comments about the importance of the Port of Baltimore. It is a major source of revenues in Maryland. The Port is responsible for $2.4 billion in personal wage and salary income. The Port generated $1.9 billion in business revenues in 2005, local purchases amounted to $1.1 billion. There are some 128,000 jobs that depend on the Port, and I understand that today's discussion is focused on matters of concern to this Committee, and I wanted to limit my comments to those issues, namely, safety, security and the impact on port operations.

I first want to say a couple words about remote siting. Remote siting of an LNG facility is required by FERC regulations in order to protect as many people as possible. Our interpretation of "remote siting" is just what it says, namely, that LNG terminals should be located as far removed as possible from populated areas and prohibited in densely populated areas. And, AES' proposal, as drafted, fails this essential public safety requirement.

When it comes to emergency evacuations, the proposed Sparrows Point project is actually on a peninsula, with minimal access to evacuate the public or accommodate emergency respondents in the event of an accident. There are a number of schools and religious establishments located in the area.

The project will also be located about one mile from the second largest blast furnace in the United States, as well as very near an ethanol production facility, both of these would be potential ignition sources that increase the risk of an accidental explosion or flash fire.

When it comes to ship navigation and safety, there is an 800-foot wide dredge channel from the Bay Bridge to the proposed LNG terminal. All LNG facilities in this channel would need a 1,500 foot moving security zone, which would severely impede the shipping traffic for the Port of Baltimore. In other words, the proposed LNG terminal and the associated delays that that would cause to other traffic would give port customers one more reason, our geography now being a bit of a disadvantage rather than an advantage, it would give them one more reason not to come to Baltimore.

The fast track FERC process requires a very quick review of this extremely complex project, thereby limiting Maryland's ability to adequately study the proposal. Additionally, I understand the U.S. Coast Guard has yet to submit its required waterway suitability report for our review.

Beyond the safety and security aspects, let me just wrap up with a couple thoughts about how this would detrimentally impact operations at the Port of Baltimore.

In order to remain competitive, the Port of Baltimore must expand its terminal in the coming years, and the Sparrows Point Peninsula is the last under-utilized property of its size in the Baltimore Harbor. It is a perfect match for the land-side needs of an expanding port. AES needs to explain how the proposed LNG facility could impact Maryland's hope to grow demand for terminal services.

Secondly, AES' proposal would require the dredging of 4 million cubic yards of material and process it on site. But, given the high cost of processing dredge material and the limited on-site space, this plan does not appear viable. In the event that this processing plant fails, the Port Authority has no additional capacity to accommodate this additional dredge material.

And additionally, as Maryland works to preserve its critical deep water channels, there is a need for another dredge material containment facility by 2013. Sparrows Point is the only site available that can meet the 2013 deadline.

Finally, the residents of Sparrows Point have historically been forced to shoulder disproportionate burden of environmental and health impacts that come from the heavy industries that historically have been located at Sparrows Point. This would be unfair and unjust for us to allow AES' proposal to continue that sad and unfair history.

So, in closing, I want to thank the Committee for allowing me to be with you. I really appreciate, Mr. Chairman, your accommodation of my scheduling issues, and while Congress has given the Commission authority to make these decisions, I sincerely believe that it would contravene, not only sound public policy, but also public safety and security concerns, especially in this age, for the

Commission to ignore the impact on communities, transportation system, and commerce.

Thank you very, very much for your time.

Mr. CUMMINGS. Thank you very much.

Ms. Mikulski, Senator Mikulski, I'm sorry.

Senator MIKULSKI. Thank you very much, Mr. Chairman, and Ranking Member LaTourette. We want to really thank you for holding this hearing, and, Chairman Cummings, for your leadership in this area.

As the Chair of the Subcommittee on Coast Guard and Maritime Transportation, you play a crucial national role at this time, when we fight the global war against terrorism, and have to also protect our people against possible disasters in their own community, and also you play a very important local responsibility, because of the important role the Coast Guard plays to our community.

I'm going to be very clear as we testify today. I am absolutely opposed to a new LNG facility at Sparrows Point. I oppose this because of my fears and because of my frustrations. I worry about a terrorist attack. I worry about an accident with ghoulish consequences. This is a national security issue and a community security issue.

Mr. Chairman, I'm on the Intelligence Committee. I know my colleague, Mr. Ruppersberger, is on the House. Every day we are briefed on those who have predatory intent against the United States of America. I know that terrorists to our country are real. Attacks to our country are real. They are plotting to kill us every single day, and they are looking for targets.

I'm also on the Homeland Security Appropriations Committee, and I know that our ports and our vital infrastructure are high-risk, high-target targets. These right now are targets of choice, but why should we allow them to become targets of opportunity.

I know that the United States Coast Guard is stretched very thin. Their motto is semper paratus, meaning always prepared, but not the way they are funded now. It's not that they aren't up for the job, but their wallet is as thin as they are stretched.

So, I worry about an LNG facility coming in to a densely populated area. I wonder who is going to guard it, and I wonder about what would happen in the event of an attack, and also an accident.

Mr. Chairman, I'm not new to this. I raised this issue when there were concerns about building an LNG facility at Cove Point, three miles down from a nuclear reactor, and at the same time we've asked for a variety of reports, there is a GAO report which I commend to you and the Committee's attention, called "Maritime Security: Public Safety Consequences of a Terrorist Attack on a Tanker Carrying LNG." Right here, it's GAO report 07316. I would commend your attention to something called page five. This isn't Senator Mikulski talking, this is GAO after an extensive investigation. What do they say would happen if there is an attack? What would they say if it's an accident? What do we say if there is a leak? Well, I'll tell you what they say, individuals who would come in contact with leaking LNG would experience freeze burns, and as the liquid warms and churns into natural gas it forms a fog-like vapor cloud. Can you a vapor cloud coming out of Sparrows Point? And, at the same time, that as the liquid warms and becomes a vapor cloud, as it travels, it just won't stink, it just won't be explosive, it could cause asphyxiation. So, that means as the cloud moves it sucks oxygen out of the air, and all who would be subjected to it would die because they would suffocate.

Well, Mr. Chairman, do we want that in Dundalk? Do we want that in Turners Station? We know the history of Dundalk and Turners Station. If it's dirty and dangerous, dump it in Dundalk. If it's dirty and dangerous, turn it in down at Turners Station.

You know how we formed Team Maryland to stop a Federal prison from coming in there, but now we are talking about injury and death.

So, Mr. Chairman, I'm hot about this issue, and as I said, I raised issues when Cove Point was being proposed. I remember coming into realizing that one month after the terrorist attack on the World Trade Center FERC approved the LNG permit for Cove Point, without any Homeland Security review. I wrote them a letter and said, what could you be thinking? And, I'm asking today, what are we thinking about here?

I wanted FERC to take a look at this. I asked the FBI to take a look at it, the Nuclear Regulatory Commission, and most of all, the Coast Guard. While the Coast Guard responded after some push, after some pull, after some push, after pull, because they didn't want to say what it would take, because it would take a lot. But, the Coast Guard promised to provide waterside security, scrutinize crew lists, board tankers, enforce exclusion zones, and look out for the community.

Well, Coast Guard, worked with Dominion Power and it happened, but guess what? Five years later, we've gotten a letter saying, from the Coast Guard saying, they will no longer provide that security. The Coast Guard said it will no longer provider waterside security to Cove Point, so what the heck will they provide at Sparrows Point?

Now, what they are essentially saying down at Cove Point is, you are on your own, and when we say you are on your own they are turning it over to the company and to the county. So, that means they are turning it over to the LNG company, and they are turning it over to the County Commissioners and the local sheriff. Oh, boy, now, that, you know, we love the sheriff in Calvert County, but he's not exactly been trained to deal with the global war against terrorism.

So, now this brings us to Sparrows Point, and I think it's the same kinds of questions. Who will provide the security at Sparrows Point? Is it the county's responsibility, and the County Executive, as gifted, and as talented, and as dedicated as this one is, his police department, his emergency management? Is it going to be AES, are they going to pay the bill in lieu of a Coast Guard? I don't know that, and I've been trying to get answers, and what I get is a lot of paper and a lot of process, but not a lot of clarity.

So, this is why I have so many flashing yellow lights about Sparrows Point, its environmental impact, the fact that there could be an attack or an accident, and who will then provide the security to deal with that or to prevent that?

So, Mr. Chairman, I have a lot of questions. I commend this report to you. I think we have this hearing to try to get at this, but right now I just think it's time to say no to those things that are dirty and dangerous coming to Dundalk and Sparrows Point.

Mr. CUMMINGS. Thank you very much.

Ladies and gentlemen—ladies and gentlemen, I would just ask that you not show—not applaud, please. This is a congressional hearing, and we would appreciate that, either for or against.

What we want to do is, we want to now go to the County Executive, County Executive Smith, but I just want to check with the Governor. Governor, what I was going to do is go to County Executive Smith, and then I know your time is tight but have all the Members ask, you know, if they have a question of you, and then we'll talk — then we'll ask questions of Senator Mikulski and County Executive Smith, if that will work.

Mr. CUMMINGS. County Executive, thank you very much for your leadership on this, and thank you for being with us this morning.

Mr. SMITH. Thank you, Mr. Chairman, and Ranking Member LaTourette, as well as the other distinguished Members of this congressional Subcommittee, it's nice for me to be back in my alma mater, and, Mr. Chairman, it didn't look like this when I was here either, quite frankly. But, I'm really grateful for the opportunity to speak here today on behalf of the residents of Baltimore County, as well as all those who truly cherish the Chesapeake Bay.

You know, as I'm confident this panel will recognize, the proposed Liquified Natural Gas facility at Sparrows Point poses a grave risk to the people and the environment, of not only Baltimore County, but of the entire region. The possibility of shipments of LNG into the heart of the Chesapeake Bay, with an 87 mile long pipeline transporting natural gas through populated areas is truly unacceptable.

The citizens of Baltimore County have been unified in their opposition to the LNG plant. We have been joined in our opposition by our neighboring jurisdictions, along with our state and Federal elected officials.

You know, as elected officials, we really have a responsibility to look beyond any minimal economic benefits of this facility to the long-term safety of our citizens and our environment. I'm here today to summarize the major points that are detailed in my written testimony that we submitted to you last week for your consideration, as you consider this very, very important decision.

First, I have to say it is disturbing that until this hearing local governments were not included in this process. This exclusion really has given the public little confidence in the overall FERC and Coast Guard review process to date. At a minimum, I would hope that the Waterway Suitability Assessment report will be put on hold until the Coast Guard incorporates and/or addresses issues identified by the local governments and other organizations that have been excluded from the process.

Second, my second major concern addresses what I believe is the fundamental conflict of locating a highly volatile LNG facility in the heart of a densely populated area. Placing this facility in the Port of Baltimore conflicts, not only with the operations of the Port itself, but also with recreational boating and chartered fleet fishing, and has the potential of damaging the Chesapeake Bay for generations to come.

Third, this proposed facility is at odds with numerous provisions of the National Strategy for Maritime Security of 2005, and the remote siting considerations as provided in the 2005 Natural Gas Act. A terrorist attack on an LNG vessel traveling into the Port of Baltimore, passing under the Chesapeake Bay Bridges, and off loading a few hundred feet from an LNG conversion and storage facilities, poses a real and unacceptable danger to the critical infrastructures of this region, and thereby, frankly, to the United States.

Fourth, the assurances of LNG proponents have been significantly eroded by the February, 2007 Government Accountability Office report on potential terrorist attacks on LNG tankers. I understand that the Department of Energy is looking to additional studies in 2008, to begin to address some of the issues raised by the GAO report. Making decisions today, without the benefit of these studies, that could impact our safety is just plain reckless. It is also unacceptable to the thousands of residents of this region who live and work, we have 2,500 who work at Mittal Steel within a mile of the proposed facility, to live and work with the anxiety of having this LNG facility in their backyards.

In conclusion, I'm here today on behalf of my colleagues on the Baltimore County Council and the people of Baltimore County to oppose the proposed location of this LNG facility. An LNG facility at Sparrows Point would pose a significant threat to the people, economy and security of Baltimore County and the entire region. It really must be rejected, and I thank you for this hearing, and for your time and consideration.

Mr. CUMMINGS. I want to thank you very much, thank all of you. What we are going to do now is, to the Members of the panel, just right now we just want to direct questions to the Governor, and then we'll come back to questions for Senator Mikulski and County Executive Jim Smith.

Let me just say this before we go on, I just want to thank Delegate John Olszewski for being with us, who represents Dundalk, and thank you very much for being with us. And then, we also thank Jerome Stephens, representing Senator Cardin, who couldn't be here this morning, but thank you, Mr. Stephens.

Let me just say to you, Governor, let me ask you something here. It seems as if, I mean, in their Coast Guard talks, in their written testimony about it being okay to have these facilities within a mile, in other words, a mile, they use a mile as the key, in other words, for residential areas and what have you, and then in other testimony, written testimony that we've gotten, there's been a lot of mention of, I think it was Dunbar Brooks who will be testifying later, about how there are certain areas, like Turner Station, where there's not—it's almost—it's very difficult to get out, in other words, there are not so many ways to get out, I was just wondering, you talked a little bit about earlier about the one mile situation, I take it that you have a lot of concerns about that, is that right?

Governor O'MALLEY. Yes, Congressman, Mr. Chairman. The concerns are these, that the nature of the topography of that area on the peninsula would make evacuation in the event of an emergency very, very difficult, which means that, you know, rather than this being a remote site, this is a site that's actually contiguous to a population that is living in an area that by its very nature is very, very difficult to evacuate. Contrast that with the location in Calvert County, and, you know, there there is a facility with easy access to the shipping channel, where you don't have those concerns that you do in Turner Station and places like that, where populations are wedged into a peninsula.

Mr. CUMMINGS. Mr. LaTourette.

Mr. LATOURETTE. Thank you very much.

Governor, thank you very much for being here, and I just have one question.

Senator Mikulski, in her observations, talked about Cove Point, and I'm not a Marylander, I'm from Cleveland, Ohio, and the decisions by FERC relative to definition of remote site, is it your observation, based upon what you just said, that your opinion that the Cove Point facility would meet the remote site definition?

Governor O'MALLEY. I think the Cove site facility is more in keeping with that remote siting mandate than certainly this one is, yes, sir.

Mr. LATOURETTE. Okay, thank you very much.

And, Governor O'Malley, I just want to—you were elected beating a fellow who was a classmate of mine, Governor Ehrlich, and, you know, in politics you say, oh, boy, I'm going to come to something and maybe I'm not going to like that person. In preparation for this hearing, my wife said I should read up about you, and I did, and I want to tell you, despite that fact I think you are a great guy and the State of Maryland is lucky to have you as its Governor.

Governor O'MALLEY. Thank you very much.

Mr. LATOURETTE. Thank you.

Mr. CUMMINGS. Well, when he runs again we'll bring you up here to campaign.

Mr. LATOURETTE. Do we have that on tape?

Mr. SMITH. We have that on tape.

Mr. CUMMINGS. Congressman Ruppersberger, who has exercised his great and tremendous leadership on this issue, and thank you very much.

Mr. RUPPERSBERGER. Well, thank you, Governor, for being here, and Congressman LaTourette, I want you to know that our Governor, former Mayor, is also a Ravens fan. I know how you feel about us in Cleveland, but stay with us.

The questions I have really are probably to you and to Senator Mikulski about the Chesapeake Bay Bridge. The Bay Bridge is an irreplaceable part of Maryland's transportation system. The bridge carries supplies and merchandise to the many businesses on the Eastern Shore, as well as thousands of tourists to the summer getaways. And, according to the Maryland Transportation Authority, on Saturdays in the summer an average of 95,000 vehicles cross the Chesapeake Bay Bridge, and they expect in 2025 there will be 135,000.

Now, one of my big concerns would be if something were to happen to the bridge, and what that scenario could be. You have tankers that could, as a result of an accident, not in a terrorist situation, could cause severe damage on the Bay Bridge. Not only would it harm life, but also the economic impact that it would have in the State of Maryland to cut the Bay Bridge off.

Richard Clarke was hired by the company that wants to build this facility, and he made a comment, and I responded to his comment in the media, that he did not feel there would be a security problem, including the Bay Bridge. And, one of my comments is, you have been hired by the company who wants to put the LNG facility, but secondly, have you never visited the Bay Bridge in the summertime? And, I think we really need to deal with this issue.

The question would be, what economic impact would the Bay Bridge, if there was an accident or a terrorist situation, have on the economic impact of the State of Maryland and the Eastern Shore?

And, there's another issue that's very important and I'm going to ask this to County Executive Jim Smith, the security issue for not only Coast Guard, but first responders. I'll give you an example, in Boston an LNG tanker, the city has to supply the fire truck support, helicopter support, state police to block off a bridge, and I can imagine what would happen if we blocked off the bridge, the Chesapeake Bay Bridge, that the tanker passes under, marine police, state police, divers.

Now, has the State of Maryland been able to assess the potential cost of security? What other facilities will be needed to provide this facility, and then also the economic impact.

Thank you.

Governor O'MALLEY. Congressman, our Secretary of Transportation, Mr. Porcari, is here, and I believe he's going to be staying after I go.

That's been one of our concerns as well. One would think that if you need a 1,500-foot security, moving security zone around a shipment that it would necessitate the closing of the Bay Bridge when that shipment is moving through. I haven't seen a definitive answer to that, but it would be all sorts of costs to holding that up, although, I guess Congressman Gilchrest might say there's some constituents who would prefer that the Bay Bridge no longer give access to the Eastern Shore.

Mr. CUMMINGS. We're one Maryland.

Governor O'MALLEY. But, I think that's a big concern, and I think that's a real concern and it's a question that we have yet to receive an answer for, but it would necessitate additional security, it would necessitate blocking off the bridge if, indeed, we have to close it in anticipation of the shipment coming through. It would absolutely stretch our resources if we had to provide the air cover and everything else that it would need coming through, if those statements are true.

Mr. RUPPERSBERGER. And, it's my understanding, unless you correct me, that there's no other route to the Eastern Shore, other than going around 95, is that correct?

Governor O'MALLEY. You'd have to either go around north or you would have to go through the tunnel across from Norfolk.

Mr. RUPPERSBERGER. I assume that would have great economic impact on the State of Maryland.

Governor O'MALLEY. It would have a huge economic impact, it would be, you know, God forbid something happened and the bridge were taken out for more than the hours that it took for the ship to pass, then, yes, sir, that would have a devastating impact on tourism, and Ocean City, and the destinations, not to mention the displacement and the impossibility of many people who now live on the shore and commute to work on the western shore being able to get to and fro.

Mr. CUMMINGS. Thank you, Governor.

It's my understanding that Mr. Sarbanes has to leave, but I want to thank you for being here, and Mr. Gilchrest has decided to yield to you, and so, Mr. Sarbanes.

Mr. SARBANES. Thank you, Mr. Chairman.

Just very briefly, I don't have any questions for the Governor, I just want to thank you, Governor O'Malley, for your leadership on this issue, and many others, the compelling testimony as well to Senator Mikulski and County Executive Jim Smith.

And, I want to thank you, Mr. Chairman, for your leadership. I'm on a steep learning curve in Washington right now, but it's being helped by being able to watch you in action, not just in Washington, but when you bring these issues into the District. So, thank you very much.

Mr. CUMMINGS. Thank you, Mr. Sarbanes.

Mr. Gilchrest.

Mr. GILCHREST. Thank you, Mr. Chairman.

Welcome, Governor. Could you describe what your role is, I would like to make some comments about the Bay Bridge, but I'll talk to Dutch a little bit later about the Eastern Shore remaining rural and agriculture, carpeted with farms and dotted with fishing villages. So, we are okay right now.

Governor, could you describe your role as this permitting process has proceeded, as Governor of the State of Maryland, and I'm going to ask the County Executive the same question a little bit later, what is your role and your ability to effect the permitting process for this LNG facility, and what would you like your role to be considering we have a Federal system where the distribution of responsibilities are delegated between the Federal Government, and state governments, and county governments, and is there anything you think we can do as Members of Congress in Washington to enhance your ability to have some say in the process of permitting a facility that will bring in natural gas, or even maybe other products that are dangerous, that come from the International Community?

Governor O'MALLEY. Well, my role is, first and foremost, as is the role of, I believe, every person in the Executive Branch of our Government, whether it's Federal, state or local, to safeguard and protect the well-being of our people. So, first and foremost, that's my primary concern.

As far as the regulatory process and the permitting, the Federal Government has a great deal of power and occupies this particular realm with both feet, but I would hope that by being here today, and with the Chairman kindly bringing this hearing to Baltimore, that the voice of our state government will be heard in this matter.

All of us are facing energy pressures, and challenges of creating renewable forms of energy, diversified portfolios, protecting consumers as well, but I think that always has to be balanced with public safety concerns.

Beyond the actual permitting of this facility, is also the logistics of keeping channels open, and making accommodations for dredge material, and doing those other things that fall within my role as the person primarily responsible for maintaining the economic health of a port that employs over 128,000 people.

So, that's how I see my roles, Congressman.

Would we like to have more input in this? That depends on how—that depends on how these proceedings go. We do believe that right now we are being heard, but we believe that the security interests are paramount here, and that when the Governor of the state and the County Executive of the jurisdiction tells our Members of Congress that we do not have the capacity to be able to protect our citizens, given the particular topography of this site, we believe that those opinions should be heard.

Mr. GILCHREST. Thank you.

Just one other question. Do you see you role as Governor, is there another avenue, besides this hearing let's say, that your voice can have an impact?

Governor O'MALLEY. I don't know, Congressman. I mean, we are participating in this process. We are joining forces with the County Executive, and we are going to do everything we can to exhaust our remedies in this process before going to any alternative or judicial process.

Mr. GILCHREST. Thank you very much.

Governor O'MALLEY. Thank you.

Mr. CUMMINGS. Mr. Governor, I want to thank you very much. I know you have to go, but I just wanted you to know you've got the FERC people right behind you, they are literally sitting right behind you.

Senator MIKULSKI. Mr. Chairman, before the Governor goes.

Mr. CUMMINGS. Yes.

Senator MIKULSKI. One point, and I know Congressman Gilchrest is familiar, is the Coastal Zone Management Plan, and as you know, that's designed by the state, and, of course, it comes under the Commerce Department, as you know, Congressman Gilchrest, you've been so active on the Coastal Zone Management. And, I believe the Governor can have input there, ask for additional information through the CZMA.

Mr. CUMMINGS. And, if there are—I see that a number of your staff, like Mr. Porcari is here and others, if there are additional questions, Mr. Governor, that you or your staff want us to present to the Coast Guard or FERC, please, get them to us and we'll work with you.

Governor O'MALLEY. Thank you.

Mr. CUMMINGS. Thank you very much again, I really appreciate it.

Governor O'MALLEY. Thank you.

Mr. CUMMINGS. Members, what we are going to do is now go to the seven-minute rounds, and I'm not saying that you are required to use them, but we've got seven minutes each.

Ms. Mikulski, Senator Mikulski, let me—your testimony probably has had—not probably, it has had tremendous impact on me, and

I'm sure this Subcommittee, with regard to Cove Point, and let me tell you why.

We just finished an eight-hour hearing on deepwater, and we saw, we have seen, we have, basically, looked at the Coast Guard from inside out, and we are abundantly clear that it is a great organization, as you said, a great organization, not good, great. But, it has, since 9/11 it's been—more and more duties have been piled on the Coast Guard——

Senator MIKULSKI. Absolutely.

Mr. CUMMINGS. —and it's stretching, stretching, stretching, stretching, and we are concerned, as you are, that we wonder whether the Coast Guard is going to be able to take on these responsibilities of addressing the needs of a Sparrows Point LNG, and, and, keep in mind, there are 12 under construction. So, that means we've got a Coast Guard that's already thin. We've got a Coast Guard that actually has vessels that are impaired, and I'm just wondering, with regard to the Cove Point, so when commitments were made to you with regard to Cove Point the Coast Guard was probably in better shape then than it is today. And so, I just wanted to just hear your comments on that, because—we don't want a situation, I don't think any of us want a situation, where we have something that's been approved, and part of the process, of course, is making sure that if it were approved that it's properly guarded, and everything is properly taken care of with regard to security, and then it's turned over to a local police force. No offense to the local police forces, but the Coast Guard, one of the things that we do know from—this is our jurisdiction, we know the training pretty much that the Coast Guard go through, they know how to board these foreign vessels, they know what to look for, things of that nature, and so, and we keep in mind finally that all of these ships, all of them, carry the foreign flag, a foreign flag.

And so, I just want your comments on that, please.

Senator MIKULSKI. Well, first of all, your insights are accurate, Congressman. Number one, we have a convergence of two points here.

Now, let's look at where your Committee is, and let's look at where the Coast Guard is. Remember, after 9/11 we moved the Coast Guard from the Transportation area, both authorizing and appropriations, and we put it under Homeland Security. So, the Coast Guard is supposed to be a Homeland Security agency, preventing and protecting us against predatory attacks. Also, they have that ongoing role of environmental enforcement in search and rescue, along with interdiction for drugs.

Now, guess what, at the appropriations hearing we heard they are $8 billion short. So, for their national responsibility, and given the mandate we've given them to protect the Nation, and to rescue at sea, they are running an $8 billion shortfall. This can't be made up by County Executives, County Commissioners, and sheriffs and local police. That's not their job. It is our job, and that's why we have to look at this budget and where our money is going.

The other is, that in the Department of Homeland Security they decided that Maryland is not high risk, so we are not getting their fair share. It's what you and the Members of the House, and I and Senator Cardin, have been fighting for, because, remember, they felt that Nebraska was a higher risk in terms of getting Homeland Security money than those of us in the Capitol Region.

So, we've got a double whammy. Our beloved Coast Guard has a lot of unfunded Federal mandates in our protection, and they've decided we in Maryland don't rank with Nebraska in terms of the funds for homeland security and port security.

So, you see, they cannot have the resources to do this job.

Cove Point, if I could just describe this, is—Cove Point is in Calvert County, which is midway up the Bay from the Eastern Shore, and the important thing about Cove Point is not about its access to water, and how easy it would be to get up on Route 301 in the event of an accident or an attack, it's three miles from a nuclear power plant. Hello! What are the high-risk targets?

Now, I must say, we've all worked very hard together to make Cove Point workable. The Coast Guard was prime time. We worked then with Governor Ehrlich, in terms of an overall support from the state police, Dominion Power work, et cetera, but just a few months ago we were told by the Coast Guard they were pulling out. So, guess what the Coast Guard is doing now, and we'll ask them those questions, they said they are doing innovative and multi-jurisdictional security. I don't know what that means. What it says now, they are providing a layered system, I don't know what that means, of security.

Well, you know what they are doing, they are training Calvert County sheriffs with ride-alongs. Well, I happen to believe in our sheriffs, okay, particularly, in our rural communities. They really stand sentry against gangs, meth, providing local law enforcement, but are they equipped in the event of this type of disaster, when again, the local governments certainly aren't getting Homeland Security money, the Governor, we know we are not getting our fair share.

So, I think we've got a jackpot on our hands here.

Mr. CUMMINGS. I want you to understand that we've been trying to—and I think that what is interesting in our Subcommittee, I think you would have—there is a consensus with regard to our desire to see the Coast Guard be the very best that it can be, and be able to do all the things that we are requiring of it. And so, I thank you for your comments.

And, I want to go to you, County Executive Smith. You know, you talk about the—you talked about the input that you have not had. I mean, nobody has talked to you about this, I mean, on the Federal level, and what have you been doing in an effort to try to have some input? After all, it does affect you and your government and the people that you have sworn to represent.

Mr. SMITH. Well, we have participated in the FERC process. There was a pre-application hearing in June of last year, and I testified there, as well as had about 12 of my department heads, because we testified from various aspects as to the concerns and the inappropriateness of the location at that time.

We also met the deadline with regard to the filing of the voluminous reports in connection with the window of opportunity we had in the FERC process. However, with respect to this waterways report, frankly, I didn't even know it was ongoing, even though a Coast Guard representative was in attendance at that June hearing, pre-application hearing. So, we really haven't had an opportunity to participate in this process until today, and we are very grateful for that opportunity that you have given us, by having this hearing today.

As far as, you know, what does local government have the right to do, land use is something that is critical to local government, obviously, and Baltimore County has attempted to regulate the use of this land in a way that would preclude the LNG facility there, because we have the responsibility for the health, safety and welfare, and safety is one of the big issues with regard to government responsibility. But, actually, AES has us in Federal court trying to prevent us from having that land use measure sustained.

We have also approached this from an environmental standpoint, through the Coastal Zone Management Act, I may not have the handle exactly right, but it is the Coastal Zone Regulations of the Federal Government, which allows the state to do some regulation, and the state allows the locals to do some regulation. And, we are working with respect to that area, mostly that deals, obviously, with the environmental component or concerns with regard to the location of this LNG facility.

But, even with regard to that, NOAA has the right to overrule, and even if NOAA doesn't overrule, quite frankly, the Secretary of Commerce can be appealed to, and the Secretary can overrule a local, state objection on environmental grounds, and still be overruled.

So, kind of to get to Congressman Gilchrest's question also, which is related to this, is we don't have a lot of hours in the quiver, quite frankly, to address—even though we have the responsibility to protect our citizens, we really don't have much of a role because FERC has really been given almost the absolute authority and power to override everything in connection with their determination as to whether to license this facility.

I have Richard Muth over there, who is my Homeland Security and Emergency Management Director, and I have been beating on him for over a year with respect to what can we do if this happens. And, the reality is, we can't do that much. I mean, the approach in the industry, as best we understand it, if there is an explosion you let it burn itself out. That's, basically, how you handle this.

So, the idea is, we never want an explosion. Well, how do you not get an explosion? You don't get an explosion if, number one, you don't have attractive targets, and, Congressman Ruppersberger, what more attractive to terrorists would it be with a summer-filled family, filled Bay Bridges going to the Eastern Shore that blows up, I mean, what an attractive and a very sick way, but an attractive target for terrorists.

And then, what happens to the whole economy of the Eastern Shore, with respect to if the bridges are blown, I mean, that's not just a season, that is years of economic harm that comes.

So, all of these aspects, we have the responsibility, but we don't have the ability to monitor. I mean, the Coast Guard really would have to provide the security. The Federal Government would have to stay on top of any potential terrorist activity in the Chesapeake Bay, if, in fact, this site is approved.

So, you know, I may sound passionate about the issue, but it's because it's an issue that deserves passion, I mean, because it is that critically important to human beings, and when I hear that, well, there's only 1,500 people who live in Turner Station, and there's only 2,500 people who work at Mittal Steel, and so that's 4,000 people, and maybe there's a few more people in Edgemere that would be affected if it blew, and that's not enough? That makes me sick, quite frankly, to think that that isn't enough people to be an attractive terrorist attack.

And, the report, the GAO report, raises all kinds of issues as to whether a mile is the distance of the burn. They don't know, and I think before we get into a populated area in the Port of Baltimore we ought to know.

Thank you.

Mr. CUMMINGS. Mr. Latourette.

Mr. LATOURETTE. Thank you very much, Mr. Chairman, and thank you, Senator and County Executive, for your excellent testimony.

I thought this hearing was going pretty well until Ruppersberger brought up the Baltimore Ravens, but it does—it does, in fact——

Mr. RUPPERSBERGER. I can understand that.

Mr. LATOURETTE. —lead to my question, Mr. Smith.

My staff tells me that Baltimore Gas & Electric has been liquefying natural gas in the City of Baltimore since 1975, less than a mile from your two beautiful, beautiful stadiums. Is that true?

Mr. SMITH. I don't know if that's true. I can tell you, though, it's not an operation of the dimension of the proposed LNG facility at Sparrows Point.

Mr. LATOURETTE. But, let me ask you this, again——

Mr. SMITH. I know we have some, I just don't——

Mr. LaTourette: —I think you have three tanks, if my information is right, and those tanks are about a third of the size of the tanks at Cove Point, and so if you'll permit from a devil's advocate standpoint to accept that as true——

Mr. SMITH. Sure.

Mr. LATOURETTE. —I would ask you what this City's experience has been with those facilities?

Mr. SMITH. Well, Baltimore County is a jurisdiction that wraps around the City, but the City is a jurisdiction unto itself. So, I am not intimately familiar with what that—what issues they have had to contend with, Baltimore City has had to contend with, with regard to that facility.

Cleveland, I think, is in a county, but Baltimore is its own jurisdiction, it's not within the county. So, I'm just not intimately familiar with that situation.

Mr. LATOURETTE. Okay. I would think if it had been a big problem it would have come to your attention, one, but two, and more importantly, I think the Senator's point is right on the money, and what I'm trying to get at is, even though that facility has been there since 1975, and my information was that there was a crack in the mid 1990s that was resolved in an expedited manner, but I think the world has changed since September 11th, and so you are not longer talking about maintenance, you are not longer talking about how you take care of facilities, we are now talking about terrorist targets.

So, are you saying that you are not the right county person to get in front of us to talk about what they've done to upgrade the security at this BG&E facility?

Mr. SMITH. I don't know what they've done to upgrade the security at the BG&E facility, but I think the point that you made is a critical point, that the world has changed since 2001, and what was reasonable back in 1975 is no longer reasonable any longer.

I don't—I know that the Governor, who was Mayor of Baltimore before he became Governor just last November, was a leader nationally in the area of Homeland Security, and had initiated a lot of Homeland Security programs, many of them in the City, because we worked in a collaborative fashion.

But, I don't know specifically with regard to the BG&E facility.

Mr. CUMMINGS. Will the gentleman yield briefly?

Mr. LATOURETTE. Absolutely.

Mr. CUMMINGS. We will—we'll make sure we get that information for you.

Mr. LATOURETTE. Thank you, Chairman, I appreciate that very much, and then just lastly, sort of a comment. Somebody mentioned that these LNG ships are foreign flagged, which is right, but just to show you how everybody, I think, in the United States pulls together, and, particularly, men and women who served in labor organizations, it's my understanding that the Maritime Engineers Beneficial Association has entered into an agreement to provide U.S. license and documented officers and merchant mariners aboard any LNG vessel bound for the United States operated by Excelerate, and I would hope that that would be something that as we look at all of the issues with LNG facilities that other organizations would seek to replicate.

And, thank you, Mr. Chairman, yield back.

Mr. CUMMINGS. We are going to have testimony from that organization, I think they are on the third panel, and we'll hear from them.

Mr. Ruppersberger.

Mr. RUPPERSBERGER. Well, Mr. Chairman, I have a statement I want to read, I want to make sure I get it in the record, but I want to thank you for your leadership and bringing your Committee, and chairing the Committee. It's so important that we have an open hearing such as this, and that the facts do get out.

You know, this facility is, it's just the wrong location, not anywhere in the Baltimore County area, but just the Chesapeake Bay, and all the other issues that are involved. Other locations don't have the issues, you know, that we do have.

I want to thank the gentleman from Cleveland for coming to the Land of Pleasant Living, Baltimore is a great place, and thank you for coming here.

And also, Congressman Gilchrest, you've been so much involved, and Sarbanes, and Senator Mikulski has been taking—working with this on a daily basis, attempting to do the issues that need to be done, and also in her role in the Intelligence Committee. There's a lot that we know that we can't say, but we know the impact that this could have. And also, I know you've been working with Senator Cardin also.

I represent the district where the proposed terminal is to be located, and I have a responsibility to my constituents to do everything I can to ensure this hazardous and dangerous project is stopped. This facility is wrong for the community. It's wrong for the Chesapeake Bay, and wrong for Maryland's security.

If constructed at the former Sparrows Point Shipyard, it would be less than two miles from heavily populated neighborhoods of Dundalk, Turner Station, Edgemere, Waters Edge, and also Edgemere and in the midst of the fragile bay ecosystem.

While I was Baltimore County Executive, the same job that County Executive Smith has now, we invested over $130 million to help revitalize this area, and I know that County Executive Jim Smith is doing even more in the revitalization issue in part of this area of the county.

This facility would harm those revitalization efforts and, perhaps, most importantly, the neighborhoods around the proposed site would be vulnerable to an accident or attack at the facility. This would cause the revitalization effort to step back. It's a perception that their families are going to be in danger, and that would be a bad thing.

Before we get into the safety and security issues, I want to talk a little about the quality of life impact that this plant would have on our area. Recreational boating is a major part of the lives of the people who live in this area. It's very unique to have more of a dense area, urban area, where we have boating. A lot of times water throughout the East Coast, it's the States, but we have a quality of life where we go fishing, boating, crabbing, all of that, all of this would be impacted by that.

Boating also supports a lot of small businesses, marinas along the Chesapeake Bay, that type of thing. And, because of the size of the tankers that would move through the Bay, due to this plan, recreational boating would have to be severely curtailed or even eliminated throughout the tankers' routes, plus there's a catchment area, if you've seen Cove Point, an area would boating would not be allowed to occur. The impact on boating in Maryland would be devastating and unacceptable.

We have the Coast Guard here today, and I agree with Congressman Cummings. I didn't realize until I came to Congress what a quality organization, they do so much, but they have so much responsibility, and they would just have a lot more responsibility, and I'm not sure that they have the resources, the support, or the money to do what they'd have to do.

I want to thank the Coast Guard again for the hard work you do in the Baltimore area and around our Nation. The Coast Guard will be offering security and navigation safety recommendations to FERC, and I hope they will play a significant role in determining the future of this project.

I'm very concerned that area residents could be harmed if there's an accident at the facility or a terrorist attack. Liquified Natural Gas is hazardous fuel that can explode when ignited. In addition to the plant itself, the tankers bringing natural gas to the area would be targets as well.

A report by the nonpartisan Congressional Research Service entitled, “Liquified Natural Gas Infrastructure Security: Issues for Congress,” cautions that, “Potentially, catastrophic events could arise from a serious accident or attack on such facilities, such as a pool or vapor cloud fires.”

The U.S. imports about 3 percent of its natural gas as LNG, but by 2030 that percentage is supposed to rise to 17 percent. To meet these demands, there are now proposed 32 on-shore LNG terminals, plus five off-shore sites.

It is my understanding that as of October, 2006, FERC and the Coast Guard have approved 13 LNG applications. We are moving quickly to meet our energy needs, but I fear that because of our haste that we are not adequately addressing security. This is the wrong location.

We do have to find ways to meet our growing energy needs, but it must be done with safety as the paramount consideration. Throughout our country communities are concerned about safety issues and potential LNG terminals. I serve on the House Intelligence Committee, and Senator Mikulski in the Senate, and we know how familiar these type of threats are to our country. We have to recognize that the world environment we live in is dangerous. Terrorist want to, not only hurt us, but they also want to do it in a spectacular fashion. Imagine a tanker on attack under the Chesapeake Bay Bridge in the summertime. They want to draw attention to their attacks, and to show us that we are vulnerable in all aspects of society.

At the heart of the safety issue is the heat impact of the LNG pool fire. There are at least six unclassified studies on the LNG safety issues. The range at which people would be in danger at 1/3 of a mile up to 1.25 miles, but there are a number of risks aside from the explosion and subsequent heat exposure. There is asphyxiation and the yet to be fully understood cascade fire.

I understand there is a lot of uncertainty on what can happen, and I think that uncertainty should be a warning sign to all of us. It should tell us all that we are not sure about what could happen. That’s not acceptable.

And, in a densely populated area, the uncertainty should be enough to halt the LNG facility. The Baltimore area represents a unique security environment. For this proposed site tankers carrying natural gas would have to travel far up the Chesapeake Bay, past Cove Point LNG facility, past Calvert Cliffs, past the Port of Baltimore, and under the Chesapeake Bay bridge to reach our communities. It becomes path of targets. The tankers themselves are a significant threat to the environment, the Bay Bridge, and millions of people who live near the bay.

The Coast Guard is already patrolling the LNG facility at Cove Point and Calvert County. The Coast Guard’s security capabilities could be stretched to thin if another plant is opened nearby.

The Bay Bridge is an irreplaceable part of Maryland’s transportation system. The bridge carries supplies and merchandise to the many businesses on the Eastern Shore, including the rural businesses, as well as thousands of tourists to summer getaways.

According to the Maryland Transportation Authority, on Saturdays in the summer traffic averages 95,000 vehicles and is expected to increase 42 percent by 2025 to 135,000 vehicles on the Chesapeake Bay Bridge, going over the Chesapeake Bay Bridge.

There are no alternate routes over the bay. Without the bridge, cars would have to travel far north or far south to get to the Eastern Shore of Maryland. If the bridge were made unstable by an attack or an accident on one of the natural gas tankers traveling up the bay, large portions of Maryland's economy would be brought to a standstill.

A majority of the community in Baltimore opposes this proposed terminal because of security reasons, environmental concerns, potential impact on the Port of Baltimore, and a basic elimination of life on the Chesapeake.

I join with my community in opposition to the proposed LNG terminal in Sparrows Point.

Thank you.

Do I have anymore time?

Mr. CUMMINGS. No.

Mr. RUPPERSBERGER. No, okay.

But, I also would like to—I would like to introduce also my written statement. Thank you.

Mr. CUMMINGS. So ordered, and as a matter of fact, I gave you an extra minute or two, Mr. Ruppersberger.

Mr. RUPPERSBERGER. Oh, thank you.

Mr. CUMMINGS. I want to—just one quick thing, Mr. Smith. You understand that as I said to Senator Mikulski, our main jurisdiction is the Coast Guard, and the Cove Point situation, Senator Mikulski speaks of flashing yellow lights. It concerns me with flashing red lights.

And, the reason why it concerns me so much is that it seems as if, and we will hear testimony a little bit later, commitments were made, but for whatever reason, for whatever reason, had to be changed and could not be kept, and I'm just wondering if you had to provide the security for these—for a facility like this, first of all, do you have the resources? Do your personnel have the training to do it? How would you handle that? I'm just curious.

Mr. SMITH. Well, the answers to the first two questions are no and no, and, quite frankly, the last question would be, I have no idea how a local jurisdiction would handle it. I mean, you think about the nature of the issue, I mean, it's not really handling the explosion after it occurs, because right now everybody says you just let it burn out, and you let it do the damage it's going to do, and that's it. So, the key is to make sure it never explodes. The key is to make sure that there is no terrorist attack.

Local jurisdictions don't have the information, I mean, we just heard Congressman Ruppersberger say that he and Senator Mikulski know some things that we don't know, and I'm glad they do, but if we were going to have the responsibility in the local jurisdiction to meet that responsibility we'd have to know that. Well, we are never going to get that kind of information, the kind of terrorist information that the Federal Government has available to it that it can share with the United States Coast Guard, that isn't going to be shared with Baltimore County Police. It's not going to be shared with our Marine Division of our Baltimore County Police Department. We are not going to have the data, we are not going to have what it's going to take to provide the security for prevention, prevention of a terrorist attack on an LNG facility at Sparrows Point.

That's the truth. That's the reality. If anybody is saying differently, they are kidding you, because the information just would not be available to us.

In addition to the fact, we don't have—our Marine Division is not very large, quite frankly, in Baltimore County, even though we have 175 miles of waterfront, but we have a very small Marine Division of our Police Department. And, we don't have the kind of national security unit that would ever be able to have what would be needed to provide the security for that plant in Baltimore County.

Mr. CUMMINGS. Thank you very much.

Again, we thank both of you. Are there any other questions?

Mr. Gilchrest, I'm sorry, Mr. Gilchrest, I apologize.

Mr. GILCHREST. It's all right, Mr. Chairman.

I want to stay on that line of thinking for a while, and we just had a GAO study that recognizes some of the inherent and potential problems with natural gas.

We also have access to the Congressional Research Service, so maybe we should ask GAO and CRS to do an evaluation of the Interstate Commerce Clause, because I think maybe this touches upon that issue as far as the U.S. Congress being responsible for interstate commerce, LNG coming up to these different ports certainly with all the pipelines have to do with that constitutional issue.

But, when we look at that constitutional issue, and then what you are describing here with the Coast Guard responsibility of looking after the safety of all these facilities, and then the Coast Guard not having enough people to do that, and then looking for ways to layer that into the local jurisdiction with local police and state police.

So, it seems to me that if the local jurisdiction is going to have responsibility for the security of these facilities, for the safety of these facilities, then the local jurisdiction has to have some jurisdiction and direct responsibility in that permitting process.

So, we want to stay involved in this and be your sounding board as we move through this process, certainly for the next two panels, so that we can ask them specific questions about safety and security measures, but coming from the Eastern Shore I know how burdened already the local police force is, and we have a lot of water on the Eastern Shore, local police force, and the state police, and people that work in the marine safety areas, they are already stretched beyond the breaking point.

When we first began to look into this issue with Cove Point, when they operated, when they didn't operate, now that they are operating, this was prior to 9/11, so we had a certain view of the world. Now we have a different view of the world. So, if local governments are going to be responsible for the safety and security of these kinds of facilities, which are, we must assume, targets for terrorists, there's got to be a new time frame or new dimension to look at these issues.

The other comment I wanted to make was, this is actually making us more dependent on foreign sources of fuel. The more facilities you open, the more foreign sources will this country be dependent upon, and maybe we shouldn't—you know, this is just a thought off the top of my head, maybe there should not be one LNG facility opened in the United States until we say that every single vehicle should be doubled in their gas mileage, that no incandescent bulb should ever be produced again, that we are going to target, and we have the technology that is available right now to really make us energy independent, if we had the political will to move forward and do that.

Thank you, Mr. Chairman.

Mr. CUMMINGS. Thank you very much.

Just one other question to Senator Mikulski. Senator, we've been, and FERC is going to testify, but, I mean, just putting on your hat as a Senator and representing the state, one of the things that is interesting, according to our numbers, and FERC will correct me when they come up here, but, apparently, they've approved 12 for construction and denied one LNG plant, and I'm just wondering, does it concern you that maybe in the law of averages that maybe you would expect more to be denied? I'm just curious.

Senator MIKULSKI. Well, Mr. Chairman, first of all I don't know the circumstances of those requests, but I am concerned that FERC has a pattern of approving a lot of the requests. Second, I'm also concerned, and will pursue that in my questioning, about are they taking into consideration the national security issues that now have befallen our United States of America. We are at war. We are also at war in the global war against terrorism. What are targets of opportunity and also targets of choice, but energy facilities, whether they are nuclear power plants or LNG.

When we looked at Cove Point, one of the places I went was to BG&E, Mr. LaTourette, to make sure what were they doing. BG&E is spending a bucket of bucks on their own to provide their security and then coordinating with a lot of other local resources.

So my concern about FERC is, what are the national security concerns, and how do they coordinate that with the appropriate Federal agencies, the Nuclear Regulatory Agency, the Coast Guard, and, of course, the Intelligence Department at the Department of Homeland Security. I mean, this is, ultimately, where is the Coast Guard? It is no longer under the Department of Transportation, it is under the Department of Homeland Security, it's job is to protect the homeland. FERC's job is to listen to what the homeland protectors say and have that as part of their permitting process.

Mr. CUMMINGS. Thank you.

Mr. Ruppersberger.

Mr. RUPPERSBERGER. County Executive Smith, I see FERC is here and taking notes, and I want to get this in the record. Number one, could you describe what Baltimore County is, as you said before to Congressman LaTourette, that it is on its own, and what's your population in Baltimore County?

Mr. SMITH. About 802,000 people.

Mr. RUPPERSBERGER. Okay, now you have a large, diverse county, so you have other responsibilities, other than just to do what needs to be done in this area, is that correct?

Mr. SMITH. Oh, right, it's 640 square miles, and it has agricultural to heavy industrial, quite frankly. It is a microcosm of America.

Mr. RUPPERSBERGER. Now, what I think in some situations have been approved, you have these facilities maybe in an industrial area, but could you describe what revitalization efforts are going on in the area, how densely populated the area is compared to other areas where maybe LNG facilities have been placed, where you don't have that population.

And also, in this revitalization, I know you as County Executive, and when I was County Executive, it's Federal, state and local money that's been invested, why it's being successful, and what impact it would have on Baltimore County generally in that community if this were to come.

Mr. SMITH. Well, the Dundalk community is one of the densely populated areas of Baltimore County. It's also one of the industrial areas of Baltimore County, with very important industry there.

And, Congressman Gilchrest, we are moving forward with an ethanol plant, which the community has been generally accepting, quite frankly. So, it's not like they are against everything. They are not out there against everything.

On your $130 million in your two terms, I've already, on behalf of Baltimore County, committed another $90 million on top of that. This is an area that is—we use the term renaissance now, but it's an area that is experiencing a tremendous renaissance in Baltimore County.

And, that is, as the Congressman has just pointed out, that's both Federal, state and local dollars. So, it's been a unified effort, and this is just, as the Congressman has said, it is the wrong place to consider an LNG plant.

And, a big difference between, even this and Cove Point, and I'm not suggesting that Cove Point was an ideal location, but they unload their product a mile, I think it's a mile and a quarter from land and pipe it in, this is like 300 feet or 300 yards, it's something in that, I don't know whether it's feet or yards, it's probably yards, from land. I mean, it's a totally different operation, and, of course, it does come up, I mean, I'm going to end up repeating myself, but it does come up the Chesapeake Bay into the Port, closes the Port because of the distance that you have to be from the tanker, and that will close the channel, when the tanker is going to the LNG plant itself. I mean, it is a major threat and a major negative.

I can tell you, the Dundalk area is in a renaissance, and our Economic Development Department has been taking prospects, businesses that we are looking to locate in Baltimore County. We've had two of those major employers say, is that where the LNG plant supposed to go? Show us other sites in Baltimore County. We do not want to be in close proximity to that facility.

So, it's not just the people of Turner Station, and Dundalk, and Edgemere, who work at Mittal Steel that are concerned, there's a lot of concern out there, and I think it is clearly justified.

Mr. RUPPERSBERGER. And, as you said, it impacts Anne Arundel County, Baltimore City, all these areas, where these huge tankers are coming up, not a terrorist attack, but could be exposed to an accident, which could cause devastation.

Thank you, County Executive.

Mr. CUMMINGS. Thank you very much.

I want to thank you both for your testimony. We really appreciate it. It's my understanding that now Senator Mikulski is going to join us. I ask unanimous consent that the Senator may join the Subcommittee for the remainder of the hearing, for the purpose of asking questions of witnesses. Without objection, it is so ordered.

We are going to take a seven-minute break, seven-minute break.

Senator MIKULSKI. Mr. Chairman, I also want to acknowledge the fact that Senator Cardin is also opposed to the LNG. He will be submitting testimony. He is at a meeting on the Helsinki Commission on Human Rights at the request of Senate leadership in Europe today. He wanted to be here, and he wants to be on the record, and we are both united in this.

Mr. CUMMINGS. Thank you very much.

Thank you, we will look forward to his statement.

Thank you very much.

Mr. SMITH. Thank you very much.

Mr. CUMMINGS. We'll take a seven-minute break.

[Recess.]

Mr. CUMMINGS. We are very pleased to have been joined by State Senator Vernon Jones, thank you, Senator, thank you for your leadership, Mr. Cummings. Rear Admiral Brian Salerno, thank you very much for being with us.

STATEMENT OF REAR ADMIRAL BRIAN SALERNO, DIRECTOR OF INSPECTION AND COMPLIANCE, U.S. COAST GUARD; CAPTAIN BRIAN D. KELLEY, UNITED STATES COAST GUARD, BALTIMORE SECTOR, RICHARD HOFFMANN, DIRECTOR, GAS, ENVIRONMENT, AND ENGINEERING, FEDERAL ENERGY REGULATORY COMMISSION

Admiral SALERNO. Good morning, Mr. Chairman, distinguished Members of the Committee, Senator Mikulski, I'm pleased to be here with you this morning to discuss the Coast Guard's role in providing for the safety and the security——

Mr. CUMMINGS. Can you keep your voice up, please?

Admiral SALERNO. —of Liquified Natural Gas vessels and facilities.

In coordination with other Federal agencies, and with state and local stakeholders, the Coast Guard is responsible for ensuring that the marine transportation of LNG is conducted safely and securely. LNG vessels do have an impressive safety record. Since the inception of LNG shipping in 1959, there have been over 40,000 LNG shipments around the world with few serious accidents, and of those accidents none have resulted in significant damage to the cargo tanks.

LNG carriers and other vessels carrying liquified hazardous gasses in bulk are built and inspected to the highest engineering and safety standards enforced internationally.

Today, there are over 200 foreign flag LNG vessels in operation worldwide. Their crews include some of the most highly trained merchant marine officers and seamen afloat.

Security for LNG vessels, as with other vessel types, involves multiple layers. The Maritime Transportation Security Act of 2002, MTSA, established a robust maritime security regime for vessels operating in U.S. waters and for the facilities which handle them. MTSA requires that the vessel develop and implement a threat scalable security plan, assign security duties to key personnel, and address a wide range of security topics, including access control measures, surveillance and monitoring, emergency procedures, and training. MTSA imposes comparable requirements on facilities.

There is also an international counterpart to MTSA called the International Ship and Port Facility Security Code, is ISPFS. Because ISPFS requirements are in effect internationally, they serve to enhance the security of the supply chain from overseas loading ports, through ocean transit, as well as during port visits in the United States.

In addition to these statutory and treaty-based regimes, we also have procedures to develop early awareness of commercial vessels intending to enter the United States. In particular, all deep-draft vessels must provide the Coast Guard with a 96-hour advance notice of arrival. This notice includes information on the vessel's previous ports of call, crew identities, and cargo. This information is fully vetted through national databases to detect any concerns or anomalies well in advance of the vessel's arrival in U.S. waters.

Based upon the risk profile, the Coast Guard may employ a variety of means to verify that the vessel does not pose a threat, such as pre-entry security boardings to ensure that the vessel is under proper control.

The Coast Guard typically escorts LNG vessels through key port areas, in order to protect against an external attack. Escorts are performed by armed Coast Guard vessels, often in conjunction with other Government agencies, including state and local law enforcement partners.

The combined efforts of Federal, state, local and where appropriate private assets, contribute to the port risk mitigation plan.

As for the facilities, the Federal Energy Regulatory Commission, FERC, has the siting authority for shore-side LNG terminals. However, the Coast Guard is a cooperating agency in the preparation of FERC's environmental impact statement.

Incorporated into the EIS is the local Coast Guard Captain of the Port's assessment and determination regarding the suitability of the waterway for the proposed vessel transits, including the identification of mitigation measures needed to responsibly manage identified safety and security risks.

Looking towards the anticipated growth of LNG, the Coast Guard continues to analyze resource allocation and capacity. Future increases in work load may be accommodated through a variety of measures, including reallocation of existing resources, expanding the use of other Government agency and private security forces to conduct security operations, requesting new resources, or some combination of these options. All of these options are under consideration.

It is important to note that there are other hazardous cargos regulated by the Coast Guard to ensure the safety and security of our ports. Moreover, there are 11 mission areas in the Coast Guard's portfolio, and to accomplish them our resources are multi-mission in nature. Our prevention and protection strategies are, therefore, aimed at ensuring that the highest risk situations receive the highest level of protection. This is an ongoing process.

Thank you for giving me this opportunity to discuss the Coast Guard's role in LNG security and our relationships with other stakeholder agencies. I'll be happy to answer any questions you may have.

Mr. CUMMINGS. Captain Kelley.

Captain KELLEY. Good morning, Mr. Chairman, Ranking Member LaTourette, and distinguished Members of the Committee, my name is Captain Brian Kelley, and I am the Commander of Coast Guard Sector Baltimore. Our base of operations is located in the Curtis Bay area, just south of the City of Baltimore, at the Coast Guard Yard.

Sector Baltimore is the largest Coast Guard operational unit in this area. The sector combines the former Coast Guard group small boat stations, Aids to Navigation Teams, and Marine Safety Office, all under one roof, which, hopefully, then equates to more convenient one-stop shopping for our customers.

We conduct operations ashore, as well as on the water, ranging from safety and security inspection of vessels and facilities, all the way to search and rescue cases.

Our sector has approximately 300 active duty personnel, 190 reservists, and 1,500 Coast Guard auxiliarists. Our operational units include three Aids to Navigation Teams and seven small boat stations, one of which is only manned during the busy summer months.

The boundaries of my area of responsibility cover most of the navigable waters and tributaries of the Chesapeake Bay and the Potomac River, from Smith Point just south of where the Potomac River meets the Bay, northward to the C&D Canal at the Maryland/Delaware line. Also my area of responsibility covers both the Virginia and the Maryland sides of the Potomac River, including the Anacostia River.

Our focus is mission execution, and my goal is to balance safety, security and commerce with the public's right to the waters. We accomplish much of what we do by employing a multi-layered safety and security system, primarily placed there by the Maritime Transportation Security Act regulations. To do this, we work closely with the private sector and with the local county and state and other Federal law enforcement agencies to ensure that we are all working as effectively and as efficiently as we can in our collective missions.

I wear many different hats in my job, and I have the responsibilities of the Federal On Scene Coordinator, Search and Rescue Mission Coordinator, Captain of the Port, Officer in Charge of Marine Inspection, and Federal Maritime Security Coordinator. The primary responsibility for me, as the Captain of the Port and the Federal Maritime Security Coordinator, is to steward the process for reviewing the proposed LNG facilities and to not promote any particular project itself.

The Coast Guard has jurisdiction over the navigable waterways and waterfront facilities, strictly as they relate to maritime safety and security of commerce, vessels, facilities and their personnel. We are a cooperating agency when it comes to shore-side LNG terminals, though, where the Federal Energy Regulatory Commission has the lead. Most of our requirements in this endeavor are found in Title 33 of the Code of Federal Regulations, Part 127, entitled, "Waterfront Facilities Handling LNG and Liquefied Hazardous Gas."

This regulation requires an applicant desiring to build a waterfront LNG facility to submit a letter of intent to the pertinent Captain of the Port. In the case of Sparrows Point, that's me. Because the transit of any LNG vessel will also be through Virginia's waters in the southern Chesapeake Bay, we work with the Captain of the Port in Hampton Roads throughout the review process.

This regulation then requires me to issue a letter of recommendation back to the applicant, as to the suitability of the waterway for the LNG marine traffic. Before that can happen, though, a lot of other things must happen first, such as an extensive safety and security risk assessment, which we call the Waterway Suitability Assessment. It's reviewed by the local safety and security committees and by my office.

This assessment and our review are also transmitted to FERC for inclusion in analysis in their environmental impact statement. We are in the process of reviewing the risk assessment submitted for Sparrows Point at this time.

In addition to stewarding this review process and providing input to FERC, we have the additional job of inspecting the facility's vessel-to-terminal transfer operations, the vessels carrying the LNG to the facility, and the security of both the vessel and the facility, to name a few.

In this brief amount of time, I hope that I've shed some light as to the roles and responsibilities of Coast Guard Sector Baltimore in the proposed operations.

Thank you very much for this opportunity to speak with you today, and I will be glad to answer your questions.

Mr. CUMMINGS. Thank you, Captain.

Mr. Hoffmann.

Mr. HOFFMANN. Thank you, Mr. Chairman, and Members, and Senator Mikulski, I appreciate this opportunity to speak with you today.

I'm the Director of the Division of Gas, Environment and Engineering, in the Office of Energy Projects at FERC, and my group is the one that does the environmental and safety reviews of Liquified Natural Gas facilities and all the interstate natural gas pipelines that get built in the country.

First today I'm going to explain the extensive design review process that we use for all projects that come before us, and how we ensure safety and security, and second I'm going to give you a status of where we are with the AES proposal that's the subject, at least in part, of this meeting today.

The Commission's primary role is as a safety regulator. It's the most important thing that we do. The safety record of LNG import facilities over the past 35 years in this country has been exemplary.

The FERC process is inclusive, comprehensive and transparent, inclusive in that we bring Federal, state, local agencies and the public into the process to get early input, and that's very important information for us; comprehensive in the way that my testimony goes into great detail on the description of FERC's engineering, environmental review, the cryogenic design review, and how we break the facility down into all its components and look at each one of them. That happens in three phases, pre-authorization, pre-construction and pre-operation. And finally, the process is transparent in that, virtually, everything we do is available through the web, it's on the record, and it's all available through our e-library system through the FERC website.

I'll go over each of the phases very quickly. First is pre-authorization. This starts with the pre-filing process, where we go out and we start to meet the public at company—usually proponent-sponsored open houses, FERC staff goes to those, we start meeting people and start to get a feel for the issues that they have.

Shortly after that, we organize our own public meetings through our scoping process under the National Environmental Policy Act, and as you heard the Baltimore County Executive was there at our meetings, and we've had dealings with his people.

As part of this pre-authorization process, we begin our detailed cryogenic design review of all the LNG facilities, the components, and the operations, and we begin our detailed independent assessment of the environmental impacts that we look at through our environmental impact statement that we prepare under the auspices of the National Environmental Policy Act. Here we begin our coordination with the Coast Guard, with the Corps of Engineers, with other relevant Federal agencies, state agencies, and also local and public input into that process.

The state review under three very critical statutes begins during this period of time, too, and those statutes are the Coastal Zone Management Act, the Clean Air Act, and the Clean Water Act.

As we compile all this data, when we get ready and our analysis we feel is complete, we publish our draft environmental impact statement, we put it out for public comments, that's for 45 days, we'll come back into the local area and along the pipeline route and we'll have public meetings so people can share with us their comments on what they think of our analysis, and eventually we'll compile a final environmental impact statement, which we'll publish, and then eventually that record will go to our Commission.

The Commissioners are the ones actually that make the decisions at the agency. I'm part of the Commission's professional staff, and my job is to put a good complete record in front of them. If the Commissioners feel that, and our recommendation is that a facility is safe and environmentally sound, and they find that it's in the public interest, they'll approve it. If we don't feel it's safe and environmentally sound, I believe the Commission will deny it, but they will make a decision.

The second phase is the pre-construction phase, and if a Commission order is issued then there's many conditions that must be met before any construction is allowed. These deal with environmental engineering, final design conditions that we've put on the facilities, its components, the way it operates, how they put together their plans, and the FERC engineering staff goes through a very detailed review of all of the final designs, the piping and instrumentation diagrams, hazard control, hazard detection, and all the systems that go into that, both active and passive.

Also a part of this pre-construction phase is the emergency response plan that has to get put together by the company, it gets coordinated with the Coast Guard and state and local officials, and emergency response planning has to be filed with the FERC, along with the cost sharing plan, and we have to review that plan, emergency response plan and cost sharing plans, and approve them before any construction will be allowed to begin.

If a project does get the approval to go into construction, it goes into the third phase, which is the pre-operational phase. So, we continually inspect during the three-year period of time that facilities are under construction, at least every eight weeks we are on site doing our reviews. All the construction is monitored, we verify all the quality control inspections that are ongoing by the applicant, the engineering procurement construction contractor, and check everything out from both a safety and environmental, standpoint.

The Waterway Suitability Assessment that gets submitted to the Coast Guard, and is the basis for their Waterway Suitability Report to us, that gets updated annually, so that any changes can be considered during that process before operations begin.

Once all the conditions are met, and we do our pre-commissioning inspections, which are another set of inspections before a new facility goes into operation, then the Director of the Office of Energy Projects will issue a letter, if appropriate, and if safety can be assured, that would allow the facility to go into operation, and then after operation we continue inspections for the life of the project, and we do that along with the Coast Guard and with DOT.

Now, I'll just quickly give kind of a status of where we are with the Sparrows Point project.

The pre-filing process began in April of 2006. That's where there open houses around the site and along the pipeline route by the company, we attended them. The FERC staff held its scoping meetings in June, and we had site visits along the pipeline route and at the LNG terminal site in both June and July.

I have a light flashing at me, so I might be taking too much time, sorry.

The application was filed in January of '08—and I'll be done very quickly. The Maryland, State of Maryland, filed its Safety Advisory Report with us in February, and we are presently reviewing all of that information, both us, the Coast Guard, the Corps of Engineers regarding dredging, and State of Maryland agencies.

We have submitted data requests to the company and gotten some answers back. We are still waiting for more. We have to review all of this information, all of these replies, our own analysis, make decisions on whether or not that information is adequate, in order for us to proceed with our draft environmental impact statement.

We are waiting for the Waterway Suitability Report, it's a formal report from the Coast Guard to us, on the navigational suitability of this proposed tanker route coming up through Chesapeake Bay.

Then eventually, we'll issue our draft environmental impact statement. We don't have a date for that right now. We will publish that for the comment period, and we'll have the meetings I addressed earlier.

Right now, specifically, the primary issues that we have before us, and these are kind of big picture, shipping safety and security, impacts to commercial and recreational boating and fishing is obviously a concern, the dredging concerns that you've heard about, bringing up toxic materials from the bottom, environmental justice, whether or not there's any disproportionate impacts to the communities in Turner Station, Dundalk or anywhere else, concerns along the pipeline route, and its proximity to people, businesses, and we'll look at all that.

I can assure you that we will thoroughly examine every single issue that gets brought before us, and we'll lay that all out in our draft environmental impact statement, and that's about where we are.

And, that concludes my comments. Thank you.

Mr. CUMMINGS. Thank you all very much.

Just to pick up where you left off, Mr. Hoffmann. When it comes to the dredging issue, in talking to some of our environmentalists community here, a lot of them are concerned that over many years, maybe even as many as 30 or 40 years, that when Bethlehem Steel was there that all kinds of things was dumped in the water. And, they believe that at the base of the—on the bottom, when you begin to dredge all this stuff up, you are going to run into a major, major problem, and they are concerned that it would be extremely harmful to the northern part of the Chesapeake Bay.

And so, I just don't know whether that has—when you mentioned dredging, I was wondering, is that one of the things that you are looking at?

Mr. HOFFMANN. Yes, sir, absolutely. It's a concern of everybody. It's a concern of my staff, it's a concern of the Corps of Engineers, the U.S. Army Corps of Engineers, the Maryland Department of Environment, everybody has their eyes on that as one of the number of issues.

The techniques that are being proposed by the company to do that dredging, the potential for it to stir up any sort of pollutants that would be harmful and would spread through areas, are all issues that we have to study, and will.

And, you know, our analysis of that will be laid out, in our case, in our draft environmental impact statement. The Corps of Engineers is a cooperating agency with us. The Maryland Department of Environment is an intervener in our case, so they are not a cooperating agency, but they have, I believe, it's them or it's the Maryland Department of Natural Resources, that has to issue one of the permits I made reference to earlier, which was the Clean Water Act 401, Section 401 permit, which is a state-issued permit based on Federal law under the Clean Water Act, and that's a concern that everybody has, and we are going to get to the bottom of that.

Mr. CUMMINGS. Now, there was—how many of these facilities have you all denied? I mean, in other words, that you said you were not—would not be suitable?

Mr. HOFFMANN. Well, the one—there's one, it was in—it was the Key Span facility up in Providence, Rhode Island, that the Commission issued an order and said that since that was an excellent existing peak shaving plant, it wanted to convert to a new import, to perform an import function, and it did not meet the current Federal safety standards for LNG import facilities, and the Commission issued an order denying that.

That's the only one, specifically, that we have denied, but there are a number of projects around the country that people have started proposing and, perhaps, just, you know, backed off or walked away from.

Mr. CUMMINGS. One of the things, I think, that you can understand, that there are a number of people that are concerned that— and they are hoping, and most respectfully they are hoping that this is not some type of, you know, that they go through the process and that the end result is sort of dictated before they even get started. Do you understand that? Can you understand that concern?

Mr. HOFFMANN. Yes, absolutely.

Mr. CUMMINGS. And so, they are concerned that all of the efforts that they are putting forth, and you've heard the testimony of the County Executive, you heard the Mayor, I mean the Governor, you heard our distinguished Senator, Senator Mikulski, we want to make sure that we have a fair process that takes into account all of the things that you have heard and more.

And so, I hope that you will keep that in mind.

Mr. HOFFMANN. Sir, it's absolutely clear to me that our Commission has a very wide open process, and takes into account all of this information. You know, our analysis and our environmental impact statement, our work with the U.S. Coast Guard, is critical to making those determinations, and with the state, and the permits that they issue.

Mr. CUMMINGS. Okay. Captain Kelley, Rear Admiral Salerno, you heard the testimony, and I've expressed my concern with regard to the Coast Guard, and I know that Senator Mikulski will probably ask some questions about this, but this Cove Point situation is quite disturbing, and can you explain what happened there? Apparently, some commitments were made, and then things changed.

See, I think what we are concerned about is that you have an approval, and then everybody goes along their merry way, and we still have to deal with it. The folks who live here have to deal with it. And, the Coast Guard, you know, you are doing a great job, but you all move on to, and leave some of the responsibility to others who may not be trained to do what you do. And, you all are well trained.

And so, could you comment on that for us?

Captain KELLEY. Yes, sir, Mr. Chairman, I'd be glad to.

First of all, let me dispel any thought that we are moving away from security for Cove Point. That is something that I looked at when I first came in here in June as the new Captain of the Port, and I saw that there was really a disproportionate amount of Coast Guard bearing that responsibility, not the responsibility, but actually the functionality of providing the security.

We will continue to escort the vessels while they are underway. However, when the vessel is tied up at the facility, similar to guarding the front gate or the land side, I thought that it was pertinent for the facility to bear part of the responsibility of security while the vessel is moored at the facility.

So, to do that I engaged our partners at the county level, as well as the state and other local entities, and the facility operators themselves, to share in the responsibility for security while the vessel is moored.

Now, to do that, Dominion Cove Point entered into an arrangement with Calvert County, and Calvert County Commissioners are supporting this, where Dominion is forking over a bucket of bucks to the county, so that the county may have—may acquire the resources, they are buying boats, they are hiring personnel, that we, the Coast Guard, are assisting in their training, as well as other Federal entities, such as the Federal Law Enforcement Training facility, they've got their personnel going down to Georgia to learn more about enforcement.

I've also entered into an agreement with the county, so that their resources can enforce the security zone around the vessel while it is moored.

So, I believe that we have a layered security system. I call it innovative, because I don't know where they are doing it anywhere else, and it's an opportunity for the vessel operators and also for the facility operators to share the burden of providing the security for the vessel.

And, I won't have them out there unless I certify that they are ready to go, and we will test them, we will train with them, they will share our tactics and our procedures, and also we operate with them, so that when we take them along, as we are right now, for vessel ride-alongs, they are learning the business, and they are learning our tactics, they are learning the boat handling that we have learned, and established ourselves as experts at. We are sharing that knowledge, so that they are fully prepared, ready to go, before I certify them.

Mr. CUMMINGS. Rear Admiral Salerno, on page seven of your written testimony you indicate that the Coast Guard is working on regulatory changes in 33 CFR, Part 127, necessary to bring existing letter of intent and letter of recommendation regulations up to date. And, why have all these existing regulations not been brought up to date, particularly, as new terminal projects are now moving forward through the regulatory process?

But, before you answer that, just think about that one, and I want to go back to you, Captain Kelley. When we look at this whole idea of 12 of these facilities already being approved for construction, and of all the things that we have to do with regard to the Coast Guard, and in light of deepwater, and all that has happened with regard to that, and all of Congress' concerns and the Coast Guard's concerns with regard to deepwater, and let's say all of those 12 that have been approved for construction go forward, isn't that going to be a bit of a burden on the Coast Guard?

Captain KELLEY. Mr. Chairman, first of all, in the hypothetical situation where we would have that many facilities submitting for approval, in each individual case we would be looking at a waterway suitability assessment and then the Coast Guard would be issuing their Waterway Suitability Report.

The Waterway Suitability Report would individually address the resources that are available to provide security and to manage the risk for each one of these facilities, which is, each facility is going to be different. Various locations, whether it's at Sparrows Point, or whether it's off shore.

So, I find it difficult to generalize and specifically answer your question with a yes or no answer, because of them each being individually and our resources are not evenly distributed.

Mr. CUMMINGS. Well, will these county marine patrols, will they have the same authority that you have? And, if they do have that same authority, where does that authority come from?

Captain KELLEY. The authority comes through our Memorandum of Agreement that I have with the individuals who are—or the governments whose personnel are enforcing our security zone.

Mr. CUMMINGS. And, that authority comes from where? Where do you get the authority to enter into that agreement? I'm just curious.

Captain KELLEY. I don't have the specific cite here with me, sir.

Mr. CUMMINGS. I mean, it's jut not something that you just came up with.

Captain KELLEY. Oh, no, sir.

Mr. CUMMINGS. Okay.

Captain KELLEY. Absolutely not.

Mr. CUMMINGS. We are in a law school.

Captain KELLEY. Yes, sir, and I fully respect that.

We do have an extensive law staff, and we've gone with the lawyers, for example, in Calvert County, we've worked hand in hand to make sure that everything is proper in regard to the law.

Mr. CUMMINGS. All right, Rear Admiral, you can go ahead and answer my question, and then I'll pass it on to my colleague.

Admiral SALERNO. Yes, Mr. Chairman.

The existing regulations do contain a process for th Captain of the Port to provide a letter or recommendation on the waterway suitability for LNG transit. Those regulations predated 9/11, and they were focused, primarily, on the safety, navigational safety concerns.

Since 9/11 we've established guidelines which greatly expand the concerns over security and give guidance to the Captains of the Port and to applicants as to how to proceed through this process. Those guidelines are contained in a Navigation and Vessel Inspection Circular, No. 505.

Our intention is to take many of those guidelines and insert them into Federal regulation. The guidelines, you know, since we are in a law school, as you know, do not constitute the same—they don't have the same weight as a regulation. We are using them, we are following those guidelines, but to make this pure we really need to take those guidelines and make them part of regulation.

Mr. CUMMINGS. We are concerned, by the way, that there are so many regulations that need to be addressed. And, we can—that may be the subject of a whole other hearing, but again, I wonder whether or not that part of the problem, while we haven't had those regulations addressed, is because of personnel issues and things of that nature. But, that's a whole other subject.

One last question, Captain Kelley, probable cause, can that be delegated, that authority, with regard to probable cause? When you delegate this authority, through your Memorandum of Understanding, your authority with regard to probable cause, that is, the boarding of a ship or what have you, I mean, is that delegated to the locals?

Captain KELLEY. We maintain our current authorities to stop any vessel in the territorial seas.

Mr. CUMMINGS. So, you don't need probable cause.

Captain KELLEY. That is correct, sir.

Mr. CUMMINGS. Well, what about the locals, they don't need it either?

Captain KELLEY. They would also be operating under our tactical control, so as far as——

Senator MIKULSKI. What about your legal authority?

Mr. CUMMINGS. I yield to the gentlelady.

Senator MIKULSKI. I just want to clarify the Chairman's question. He isn't asking you about your tactical, what legal authority can they intervene?

Mr. CUMMINGS. That's the question.

Senator MIKULSKI. That's a different legal authority than you.

Captain KELLEY. Even though I sit in a law school, I don't necessarily have all the expertise——

Mr. CUMMINGS. We are going to have to get to the bottom of that, because I think——

Captain KELLEY. Yes, sir.

Mr. CUMMINGS. —it all goes to some things that Mr. Gilchrest was asking a few moments ago, because we've got to figure out what, you know, when we start bringing in the local authorities, and I know that you've talked about the training that you give, and all these wonderful things, but, I mean, we are talking about serious business here.

Captain KELLEY. Yes, sir, without a doubt.

Mr. CUMMINGS. And, these are shipments, I mean, you are talking about a lot of LNG coming through, you are talking about 150 possible ships coming in a year, I think the testimony says. That's a lot.

And so, I think we need to look very, very carefully, you know, take a careful look at that, and, I mean, I respect Memorandums of Understanding, but we've got, you know, we do have a Congress here, and we do pass laws, and we need to take a look at that.

Admiral SALERNO. Sir, if I may.

Mr. CUMMINGS. Yes.

Admiral SALERNO. Just to add something to Captain Kelley's comments. There is a provision in the Federal regulations which allows the Coast Guard to use other law enforcement agencies in the enforcement of a security zone established by the Captain of the Port.

Also, the other law enforcement agencies engaged do not surrender their own inherent law enforcement authorities. So, they would—we have concurrent jurisdiction out there. What the Memorandum of Understanding does is establish a partnership agreement and establish the rules of engagement.

Mr. CUMMINGS. Well, we'll take a look at that.

Admiral SALERNO. Yes, sir.

Mr. CUMMINGS. Thank you.

Mr. Latourette.

Mr. LATOURETTE. Thank you very much, Mr. Chairman.

Captain Kelley, first to you, I know the thrust of this hearing is about the concern about the placement of the new facility at Sparrows Point, but just to close the loop on Cove Point. You've entered into agreements with local law enforcement. You said that the operator of the Cove Point facility, bucket of bucks isn't really descriptive to me. I mean, it's over a million dollars, is it not, a year?

Captain KELLEY. That is correct, sir.

Mr. LATOURETTE. For the specific purpose of training local law enforcement to assume some responsibilities when the ship is actually tied up.

Captain KELLEY. That is correct.

Mr. LATOURETTE. You are not transferring the responsibility of boarding the ship before, making sure everything is okay before it comes and ties up?

Captain KELLEY. That is correct.

Mr. LATOURETTE. It's while the ship is docked.

Captain KELLEY. Yes, sir.

Mr. LATOURETTE. And, that requires a certification by you. I mean, are you going to sign off on that before you are convinced that it's okay?

Captain KELLEY. I will personally sign off on it, yes, sir. We will make sure that all of the resources that are going to be enforcing that security zone are capable before they are allowed to do the mission.

Mr. LATOURETTE. Okay, thank you very much.

Mr. Hoffmann to you, when the Governor was here, he referenced the term remote site, and as you know the Pipeline Safety Act directed the DOT to consider the cost and benefits associated with the placement of LNG terminals at remote sites. GAO testified in '79 that remote siting may enhance public safety in the unlikely event of an accident at a gasification facility.

I assume FERC is required in this process that you've talked about to weight the benefits and costs of a remote site, is that right?

Mr. HOFFMANN. Yes, sir.

Mr. LATOURETTE. And, is there a definition in the Federal regulations of remote site?

Mr. HOFFMANN. Well, the way that—DOT is responsible for establishing those Federal safety standards in accordance with the Act you quoted, and the way they went through that process was to set up exclusion zones around the shore-based facility, based on certain design type spills, including a full dike spill from a failed storage tank, which has never happened. And yet, that's one of the criteria.

So, we—my engineers go through a very exhaustive process of modeling each of the spills and calculating the exclusion zones. The exclusion zones have to either stay on the property of the proposed terminal, or if they go off there are certain uses, whether it be residential or commercial interests that cannot be within that exclusion zone. The company then would have to establish control over those areas, and those are calculations we are running right now on the Sparrow Point facility.

Mr. LATOURETTE. So, if you were asked the question, is Sparrows Point a remote site, you don't have the answer to that because you are still working on the calculations.

Mr. HOFFMANN. Correct.

Mr. LATOURETTE. Okay. And, if it was not, let me just be clear so I understand, if at the end of the day you determine that it's not a remote site, you then would make additional requirements upon the potential operator to turn it into a remote site, or that's just one factor. You say, well, it's not a remote site, so that's a black mark on that one. We'll move on to the next.

Mr. HOFFMANN. In the case I referenced before up in Providence, that facility did not meet the current standards for the exclusion zones, and we felt, and, ultimately, the Commission denied it because it didn't meet those standards.

So, meeting those standards is essential.

Mr. LATOURETTE. And, is acreage, does that go into the discussion of remote site? And, I ask the question because, again, not being from here I've been told that the Cove Point site is big, whereas, this is 45 acres, am I right about that?

Mr. HOFFMANN. I believe this is about 80 acres, the AES proposal is about 80 acres of a 170 acre parcel. They are planning on using about 80 acres. So, they have more land than what they are proposing to build on, and if the exclusion zones go off that, they'll have to show that they've established control through either easement agreements or whatever.

Mr. LATOURETTE. Okay. And then, there were some questions of the first panel about the concern that the state was going to be excluded from the process. Is it your observation the state participation is still required in the Coastal Zone Management legislation, the Clean Air Act, and that the state actually has to issue the Section 401 certificate under the Clean Water Act?

Mr. HOFFMANN. Yes, and not only that, we, my staff has had meetings with the state sponsored Joint Evaluation Committee, which is made up of a number of different Maryland organizations that are all part of, you know, people we coordinate with in preparing our draft environmental impact statement.

Mr. LATOURETTE. Okay. And lastly, the last subject that I want to talk to you about, in your oral testimony you said that the industry has a safety record that's been exemplary over the last 35 years. Could you amplify on that just a little bit?

Mr. HOFFMANN. Yes, sir, that goes back to, I think the first one was the District Gas Facility up in Boston, but there are four on land import terminals in the Continental U.S. There's one export facility in Alaska. There's another import facility in Puerto Rico that's under our jurisdiction, and there has never been an accident at any one of those, which has affected either the environment or off-site public.

Mr. LATOURETTE. And that, I think, is the point I was trying to make earlier with the BG&E tanks that have been in Baltimore since 1975, there is an industry that does a good job of promoting safety, and I think that the safety record that you've talked of, my information on LNG accidents is the worst one occurred in Cleveland, Ohio in the 1940s, and clearly technology has caught up with what happened back in the 1940s, and we are way ahead of that. The ships are double hauled and so forth and so on.

So, I think that we should separate inherently dangerous enterprise from what the Senator was talking about, this is a new world, and in the new world I think that our focus needs to be on how do we protect these assets from people that would do us harm, as opposed to scaring people that this is an unsafe enterprise.

And again, based upon your—are you familiar with the BG&E tanks? Is that under your jurisdiction?

Mr. HOFFMANN. No, that facility, that facility, there's about 108 LNG facilities in the U.S. We have 17 of them that operate in either import facilities or that operate in interstate commerce. So, there's 12 peak shaving plants that are under FERC jurisdiction, maybe 13 now because we might have just approved another one, so that number might have just changed.

And, BG&E's facility is not one of them, but those three tanks hold the equivalent, I think, of about 1 bcf, 1 billion cubic feet of natural gas equivalent, and we've had staff go to that site and visit it, you know, not inspect it per se, but we are familiar with it.

Mr. LATOURETTE. And, is the safety record comparable for that side of the industry from what you've been talking about, about these off-shore operations?

Mr. HOFFMANN. Yes, it is, with the notable exception of the one that you referenced before, which was really pre—kind of pre-modern technology, the Cleveland accident.

Mr. LATOURETTE. Okay, thank you very much.

Thank you, Mr. Chair.

Mr. CUMMINGS. Thank you very much.

Mr. Ruppersberger?

Mr. RUPPERSBERGER. Yes, thank you.

Mr. Hoffmann, what weight is security given to the final determination? You have environmental issues to deal with, what weight would security be given?

Mr. HOFFMANN. Well, I think safety and security is number one, it's essential. I mean, if we can't come to that decision that the facility can be operated safely and securely I believe our Commission will not approve it.

Mr. RUPPERSBERGER. Now, how do you define security assessment, is that what you are getting from the Coast Guard, or you are getting from the applicant, how do you define security assessment——

Mr. HOFFMANN. Well, that——

Mr. RUPPERSBERGER. —when you are making a determination based on experts in that area.

Mr. HOFFMANN. —that occurs on a couple of different levels. The Department of Transportation, also PHMSA, the Pipeline of Hazardous Material Safety Administration, are the group in the Federal Government that establish, promulgate, the Federal safety standards for the on-shore facilities, and they have some security requirements in their regulations.

We include security in our review of the on-shore facility. The Coast Guard has responsibility under the Maritime Transportation

Safety Act of 2002 for all waterfront facilities, and then the Coast Guard has the responsibility for security of the tanker operations.

So, all of those things are reviewed in looking at a proposal.

Mr. RUPPERSBERGER. Do applicants conduct their own security assessments?

Mr. HOFFMANN. It pretty much all starts with the applicants, in terms of, you know, meeting the Federal standards and coming up with their own plans.

Mr. RUPPERSBERGER. Has an applicant's assessment been ever substituted for a Coast Guard assessment?

Mr. HOFFMANN. The applicants begin the process, in that they—the Coast Guard guidelines that were referred to before put the burden on the applicant to prepare a preliminary waterway suitability assessment, which is based on the channel, their proposal, the channel that they are operating in, and input from the port community, and that report is one of the initial pieces of seed information that goes into the Coast Guard process.

Mr. RUPPERSBERGER. Some of my evaluation has shown that it seems a lot of weight is given to the security assessment of the applicant. I mean, that's like the fox guarding the hen house, in my opinion.

Now, I know that's part of the process, but I wonder how much weight is given, and that's a determination.

Let me ask you this question. As far as intelligence, has an applicant's assessment ever been—or does the Coast Guard or any of these assessments deal with intelligence issues?

Mr. HOFFMANN. Well, I would have to say yes, although I don't know exactly what the Coast Guard has dealt with.

Mr. RUPPERSBERGER. Let me ask the Coast Guard. Do you have people who are cleared to talk about intelligence issues that should be very relevant to an assessment, security assessment?

Admiral SALERNO. Sir, we do have people who look at the intelligence. That is an ongoing issue, as you might expect.

Mr. RUPPERSBERGER. But, I'm asking as it relates to this issue itself, as to giving information in the assessment to FERC.

Admiral SALERNO. We do look at overall risks, yes, including intelligence risk.

Mr. RUPPERSBERGER. But, can you answer the question whether you know specifically whether or not the input from your intelligence goes into this?

Captain KELLEY. Yes, sir, we do, we have a Sector Intelligence Officer who works directly for me, as well as a Field Intelligence Support Team. We look at all of the threats, in particular, for a proposed facility like this, to make sure that we are positioned to manage the risk.

Mr. RUPPERSBERGER. Okay. Mr. Hoffmann again, what is the size of a standard hazardous exclusionary zone? I've heard that the exclusion zones are as small as 1,000 feet, and how does FERC determine the hazard exclusion zone? I think that's a major issue, because we have different types of sites. Is there a certain standard?

Mr. HOFFMANN. Yes, there are. They are laid out in the Department of Transportation standards. I made reference to that in general before, but what goes on in those standards is that there are certain specific design spills, whether they be from unloading line, during tanker unloadings, or whether it be as great as a catastrophic failure of a tank, and the dike around it fills up with LNG, and then the assumption is that it ignites. And we do our calculations either on vapor, all vapor from any sort of spill on the site has to remain on the site up to half of the lower flammable limit, which is 2-1/2 percent of natural gas and air, that has to remain on the site, per the proposal and the way it's designed. All the different sumps and containments and things like that.

Mr. RUPPERSBERGER. What is the appropriate size for the hazard exclusion zone for this proposed Sparrows Point site?

Mr. HOFFMANN. We have not completed that work yet, but we will lay that out. I mean, we'll explain all that and our calculations in our draft environmental impact statement.

Mr. RUPPERSBERGER. Let me ask you this. What is the ten-minute spill scenario? Is still the standard used for determining safety requirements?

Mr. HOFFMANN. Ten-minute spill scenario is—I'm sorry, Senator, are you—oh, okay——

Mr. RUPPERSBERGER. She's trying to assist me.

Mr. HOFFMANN. She's distracting you.

Mr. RUPPERSBERGER. She's my intern coach.

Mr. HOFFMANN. The ten-minute spill scenario is for an unloading line spill while the tanker is unloading. They operate at a pressure that pumps on the ship, pump LNG out of the ship into the tanks, and one of the exclusion zone scenarios is a ten-minute spill from the unloading line. They have to have containment that would hold that amount of liquid, so it can't spill out onto the ground uncontrolled. It has to be contained in——

Mr. RUPPERSBERGER. Is there just one scenario here?

Mr. HOFFMANN. That's one of many scenarios that get looked at.

Mr. RUPPERSBERGER. Captain Kelley, has the Coast Guard, if you know, ever banned the shipment of LNG tankers into any U.S. ports?

Captain KELLEY. Sir, I don't know.

Admiral SALERNO. Sir, I'll answer that.

Not permanently, sir, there have been occasions where a ship has been denied entry.

Mr. RUPPERSBERGER. Sometimes you are told, not when you are in law school, you don't ask a question unless you know the answer, I think the port in Boston was closed right after 9/11. Do you know what the circumstances were, why you closed that, that port?

Admiral SALERNO. Yes, sir, I do. I happen to have been the Captain of the Port in Boston.

Mr. RUPPERSBERGER. You are the right person. What's your answer then?

Admiral SALERNO. I signed the Captain of the Port order.

The reason it was held out was, it was immediately after 9/11, we realized we needed better risk information, so that we could adequately put together a security plan for the port. Up to that point, we had a very robust safety plan, we needed to address security, and we needed to address the consequences of an attack.

Mr. RUPPERSBERGER. My time is starting to run out, let me, and I thank you for that answer, that was a good answer, and I just hope we have those scenarios there now.

Captain Kelley, the Water Suitability Assessment is very important to this whole process, and it is the one product that is needed in the security assessment, I believe, for FERC.

Can you explain to me who on your team does the assessment? Do these people have expertise? Do you have the resources or enough people with all of the LNG applications coming on board, how can we be sure that the Coast Guard, who is overworked now, can be in a position to handle these assessments so that the security information does go to FERC, ultimately?

Captain KELLEY. The Waterway Suitability Assessment is reviewed by our personnel at the Sector of Baltimore, but we don't do it alone. Through the area Maritime Security Committee we've got a great collaborative effort where we have representatives from the private sector, as well as the state, county and local levels of government are partners in the port. They all have a stake in the facility. They all have a stake in reviewing the security and the overall assessment.

So, prior to issuing my Waterway Suitability Report, which is an elaboration of the Waterway Security Assessment that is submitted by the applicant, we have a multi-level, multi-perspective review of the WSA.

Mr. RUPPERSBERGER. Thank you, my time is up.

Mr. CUMMINGS. Mr. Gilchrest.

Mr. GILCHREST. Thank you, Mr. Chairman.

Mr. Hoffmann, if the site that we are talking about now at Sparrows Point did not meet the standards for a remote site, would that mean any other consideration would be moot and the site would not be permitted?

Mr. HOFFMANN. Well, if that happened, that would be based on findings that we would first make in our draft environmental impact statement.

Mr. GILCHREST. Has that been made? That has not been made yet.

Mr. HOFFMANN. No, that has not been made, and then, ultimately, that will go through public comment, go into a final impact statement, and that——

Mr. GILCHREST. But, that's a pretty big hurdle. If it doesn't meet the remote site, that's a pretty big hurdle to cross at that point.

Mr. HOFFMANN. That's correct.

Mr. GILCHREST. What is the hurdle that the Governor brought up a little earlier about interfering with port traffic, if there is a significant finding that the scheduling of LNG ships does interfere with port traffic, how much weight does that bear on this permitting process?

Mr. HOFFMANN. Well, that's one more of the burdens that we face. It's our responsibility to assess the environmental effects of the Coast Guard's report to us, the Waterway Suitability Report will establish in somewhat of a public format, but also in a security sensitive format, what their specific requirements are for safety security zones.

Mr. GILCHREST. I see.

Mr. HOFFMANN. And those things go in, you know, we have to evaluate the environmental effect of that.

Mr. GILCHREST. Is there any—do you have some idea of the time frame before some of these decisions will be made, remote site, the safety zone around other ships, is that three months, six months, a year?

Mr. HOFFMANN. I think that normally within 90 days after the follow-on, after a preliminary Waterway Suitability Assessment is put together, and meetings are held, then a follow-on Waterway Suitability Assessment, which is kind of a final, goes to the Coast Guard. That's where they pull together their own expertise in the Committee, and I have a long list of Maryland and other agencies that were involved in those meetings.

Mr. GILCHREST. I guess what I'm trying to ask, and maybe the Coast Guard, from today til when that is likely to be done, is there some sense?

Mr. HOFFMANN. Normally, 90 days, but I think——

Mr. GILCHREST. From today?

Mr. HOFFMANN. —right now there is—90 days from when an application was filed.

Mr. GILCHREST. Oh, I see.

Mr. HOFFMANN. Which was January, that's the standard timing for the Coast Guard report to us.

But, the Coast Guard is going to take as much time as it needs to do a proper analysis.

Mr. GILCHREST. So, the Coast Guard does an evaluation of the security around an LNG ship, and the Coast Guard is now doing that in conjunction with the traffic that comes and goes up the Bay into the Port of Baltimore.

Captain KELLEY. If I may, sir, that is correct. The applicant has submitted their Waterway Security——

Mr. GILCHREST. So, from this date forward when will that—when will you have an understanding of that?

Captain KELLEY. When I received the Waterway Suitability Assessment from AES, it did not have as much information in it as I required, so I sent a correspondence back to them asking, specifically, for more information.

Mr. GILCHREST. Does that 90-day period start all over again?

Captain KELLEY. As I understand it, that would be correct, because I have not accepted what they deem as their Waterway Suitability Assessment.

Mr. GILCHREST. Could any of these LNG ships go through the C&D Canal?

Captain KELLEY. Could they?

Mr. GILCHREST. Could they.

Captain KELLEY. I——

Mr. GILCHREST. What's the draft requirement for one of these LNG ships likely to be?

Captain KELLEY. I believe that they would not be able to do that through the C&D.

Mr. GILCHREST. Is it because of the draft, or is it because of its cargo?

Captain KELLEY. Initially, I'd say because of draft, and then certainly we would have to weigh the other risks that are involved with transport through the C&D.

Mr. GILCHREST. Mr. Hoffmann, under the remote possibility that this has been relatively a positive thing from your perspective, and the Coast Guard's perspective, and everybody else, and then moving through, in other words, it meets the remote standard, it doesn't interfere with port traffic, but you did say that there are a couple of provisions as far as the permitting process is concerned with environmental issues that the state has to issue a permit.

Mr. HOFFMANN. Yes.

Mr. GILCHREST. What if the state didn't issue the permits?

Mr. HOFFMANN. Well, of course, there's a couple of things that go on there. Under our scheduling authority in the Energy Policy Act of 2005, the FERC was responsible for publishing rules on scheduling. And, our rules were just done last fall. Our Commission went through a rulemaking process, notice of proposed rulemaking, put together final rules, those rules went into effect on 12/26 of 2006. What they require is that within 90 days after we complete our final environmental impact statement all other Federal authorizations have to be issued.

If any Federal authorizations aren't issued, a company, a project proponent, would have the right to go and appeal that directly to the U.S. Court of Appeals.

Mr. GILCHREST. There was an LNG or some type of natural gas accident, I'm not that familiar with, in January of '04 in Algeria. If you are familiar with that, can you say what that accident entailed, and how many casualties there were?

Mr. HOFFMANN. Yes, sir, in fact, I was a member of a DOE/FERC group that went over and investigated that accident right after it happened.

There were—what we found out, basically, was that because of air intakes into their boiler, there was a spill at that facility, it was at Skikda, Algeria, and because of vapors going into the air intakes of the boiler there was an explosion in a boiler that created an even larger explosion.

What we have done since then is come back into the U.S., and applied that knowledge, and we've gone through every facility we regulate now, and including these requirements during our cryogenic design review of Sparrows Point or others——

Mr. GILCHREST. So, you would say that that was a design flaw rather than negligence, incompetence, or terrorism?

Mr. HOFFMANN. I would absolutely say it was a design flaw, yes.

Mr. GILCHREST. I think that's about it, Mr. Chairman.

Thank you very much. Thank you, gentlemen.

Mr. CUMMINGS. Thank you very much.

How do we guarantee, just before Ms. Mikulski, how do we guarantee that that doesn't happen here, just following up on what Mr. Gilchrest was asking you.

Mr. HOFFMANN. Sir, we go through these facilities with a fine tooth comb. It would take me a long time to walk through the entire—but my testimony goes through to kind of give an idea of how we look at every valve, every thermal couple, every sensor in the plan, to make sure that if there is a leak or a spill it's detected before it turns into anything worse.

Mr. CUMMINGS. Senator Mikulski.

Senator MIKULSKI. Thank you very much, Mr. Chairman, and first of all, I think for our dedicated civil servants and Coast Guard testifying know that as we ask these questions, and they are tough, it's because we are very much concerned about safety and security, as are you. And so, just know, we have nothing but respect for the Coast Guard and also, Mr. Hoffmann, for FERC.

Our job is prevention, prevention, prevention, the prevention of an attack, which is the Intel responsibility, but the consequences of an attack, and also the safety issues.

So, with that in mind, what I'm concerned about are the national, as well as the local, consequences of deficiencies in funding which enables the Coast Guard to be the Coast Guard semper paratus, always prepared, and deficiencies in the regulatory process. So, we want to use Cove Point, Sparrows Point, as a case example to look, not only stand sentry over the safety of our own community, but also to look at what are the deficiencies in funding and also in the regulatory process. So, I just wanted to lay that ground work as we seem so hard hitting, it's so that at the end of the day you can make a sound decision on your permitting process, but we can also fulfill our responsibility on safety.

Let me go to Cove Point, Sparrows Point. My concern is that in terms of Cove Point, after the permitting process was done, and remember, you, FERC, issued the permit for Cove Point 30 days after 9/11, with no national security regulatory mandates.

We then pushed the Maryland delegation, I, along with Senator Sarbanes on the Nuclear Regulatory, on the FBI, on the Coast Guard. The Coast Guard then presented a very comprehensive plan for Cove Point, while it was also scrambling to create, see, what was their job going to be now in the global war against terrorism, which was astounding, astounding, to what we were asking the Coast Guard to do.

This has all worked, a partnership with the Coast Guard, the state and locals, as you'd say, but also with the private sector, all of which have been very good.

Then we understand that on July of '06, the Coast Guard notified Dominion, the private sector company, that it could no longer provide waterside security.

Is that right, Captain Kelley?

Captain KELLEY. Senator, the letter, basically, instructed Dominion that I believed that they should share responsibility for providing resources for the security, while the vessel is moored at its facility.

Senator MIKULSKI. Well, according to a letter from Dominion, they say, "On July 5th the Coast Guard Captain of the Port ...," I believe that was your predecessor?

Captain KELLEY. On July 5th, that was me, ma'am.

Senator MIKULSKI. "... he letter requires that we take on responsibility for waterside security." Now, let's just stop there. I know Dominion has put in the million dollars, as the Ranking Member has said, a significant amount of money, but were also then, according to you, Captain Kelley, training the local sheriff, with all due respect, to be the Coast Guard by proxy.

This is an astounding turn of events. Okay?

So, we are asking now the local law enforcement entity to assume responsibility that the Coast Guard did. Now, let me get clear on what the Coast Guard has been doing, and then what is it delegating, and then ask Sparrows Point.

Can you just, I'm going to go rat-a-tat-tat, but again, it's so we can get to the bottom. Let's go to transit up the Bay, which I understand Mr. LaTourette has answered, as a vessel transits up to the bay to go to Cove Point you continue to do security sweeps, is that what the Coast Guard continues to do?

Captain KELLEY. Yes, ma'am, we could have the security teams remain on board throughout the transit.

Senator MIKULSKI. Do you or do you not do security sweeps for LNG coming to Cove Point?

Captain KELLEY. We do as based on our risk assessment for each vessel entering the port.

Senator MIKULSKI. Do you provide, as often required, armed escorts to bring an LNG facility to Cove Point?

Captain KELLEY. Yes, ma'am, however, the vessels are not accompanied all the time throughout their transit.

Senator MIKULSKI. And, what determines that?

Captain KELLEY. Again, an assessment of risk.

Senator MIKULSKI. And, I'll come back to assessment of risk, because it's important.

Then, the Coast Guard enforces the international requirement of compliance, so you are doing that.

Now, that's what you are doing. Then, how would this then impact Sparrows Point, security sweeps, armed guard escorts coming up the Bay, under the Bay Bridge, into the Port of Baltimore? Would you do that based on risk assessment?

Captain KELLEY. Yes, ma'am.

Senator MIKULSKI. Tell me then, how is risk assessment determined? Is the Coast Guard, both the National Coast Guard, and you as the Captain of the Port, which is a big responsibility, are you in touch with the—what security agencies are you in touch with, and how do you evaluate that risk as to determine the level of security sweep and the level of armed guard escort service?

Captain KELLEY. The first start is the Area Maritime Security Committee, which is, that is our collaborative organization where——

Senator MIKULSKI. Sir, I'm interested, are you in contact with the Department of National Intelligence? Are you in contact with the Office of Intelligence at Homeland Security? Are you in contact with the FBI and its National Security Division, which is now America's MI5? Are these what you are contact with, and is it monthly, daily, hourly, what is the nature of that contact?

Captain KELLEY. We have threat assessments passed to us virtually every day. Through my Sector Intelligence Officer and our Field Intelligence Support time, we are linked in, for example, with the Maryland Coordination and Analysis Center here in Baltimore.

Senator MIKULSKI. But, we are talking about national threats.

Captain KELLEY. Yes, ma'am, and also——

Senator MIKULSKI. We are not talking about drunk boaters. Tell me about the national threats. What national intelligence agencies are you in touch with?

Captain KELLEY. Through the Coast Guard's Intel information from them as it pertains to my area of responsibility.

Senator MIKULSKI. And, that's what you currently do for Cove Point?

Captain KELLEY. Yes, ma'am.

Senator MIKULSKI. And, that's what you would then do with Sparrows Point, and depending on this assessment, which is calibrated day by day, and in some instances hour by hour, you determine that?

Captain KELLEY. That's correct, and also we have a system of maritime security levels that I can establish to control any type of response or prevention should a threat manifest itself where I think that we need to elevate our security level.

Senator MIKULSKI. And, elevate, yes, and we don't need to go into those, those, I know, are quite sensitive and we appreciate it.

Mr. Chairman, I note the red light is on, could I then go to the waterside question, because I think we now get, though, the seriousness of transit in the Bay, security sweeps, armed guards if necessary, et cetera.

Now, let's go to waterside security. In the area of Cove Point, first of all, tell me what is waterside security, and what did you provide at Cove Point, and what will you now not provide, and who will provide it? So, what is waterside security?

Captain KELLEY. To start, the waterside security components consist of a Coast Guard response boat, and that would be in the vicinity of the vessel while it is tied up to the facility.

Senator MIKULSKI. And, it's mission?

Captain KELLEY. And, it's mission is to intercept and, first of all, to deter, to detect, to intercept, identify, and stop, interdict, if you would.

Senator MIKULSKI. Essentially, a water attack.

Captain KELLEY. A water-borne attack, yes, ma'am.

Senator MIKULSKI. In other words, a water-borne attack, so you have a Coast Guard vessel currently that would be standing sentry, so in the event that a Zodiac or something, a charter boat with a Stinger missile poised at this site, you would have the authority to interdict and take down.

Captain KELLEY. We would respond to any waterside, water-borne threat.

Senator MIKULSKI. Right. Well, let's be clear, we could have a boat in the Bay with a Stinger missile. We could have those who have other mechanisms for attacks. I mean, this is big deal, it's the port, it's a nuclear facility, three miles down.

So now, we are going to ask the sheriff's department to take that on, is that correct?

Captain KELLEY. Only if they are properly trained and equipped, and that they have what I deem are the tools necessary to do the job.

Senator MIKULSKI. Okay, but——

Captain KELLEY. That's everything from——

Senator MIKULSKI. —we are now asking them to deter a predatory water attack, an attach coming from another vessel in the water.

Captain KELLEY. The same as we would of our Coast Guard resources.

Senator MIKULSKI. Okay, I understand.

Now, tell me then, what are other waterside security measures?

Captain KELLEY. From the vessel itself?

Senator MIKULSKI. You have a list of waterside activity, I'm asking you what have you provided at Cove Point and what now——

Captain KELLEY. In addition to the vessel itself that is on patrol while the vessel is at the facility, we also have personnel that are there to monitor the transfer operations and also to be on board the vessel.

Senator MIKULSKI. So, you have people on the vessel, and what is their mission?

Captain KELLEY. Mostly, their mission is to make sure that the transfer is going on safely and securely, and part of that is focused inward toward the facility, as well as some of their focus is outward toward the waterside.

Senator MIKULSKI. And, that would be then now done by whom?

Captain KELLEY. Well, it's done right now by the Coast Guard Patrol.

Senator MIKULSKI. I know, but with the delegation of waterside authority, who then would assume that responsibility?

Captain KELLEY. I maintain the responsibility.

Senator MIKULSKI. So you will keep that responsibility.

Captain KELLEY. Yes, ma'am, absolutely so. It is my role as the Captain of the Port to ensure the security of that vessel and that facility.

Senator MIKULSKI. Well, that's quite hard to do.

Now, tell me then, what do you do at the dock?

Captain KELLEY. Our——

Senator MIKULSKI. Or the transfer point.

Captain KELLEY. —our personnel at the transfer point, I have the inspectors that are there to observe the transfer, to make sure that all the procedures and all the protocols are being——

Senator MIKULSKI. Which also goes to the safety issue, because the transfer of LNG could be a vulnerable point in terms of an accident.

Captain KELLEY. Yes, ma'am.

Senator MIKULSKI. Isn't that the most vulnerable point of an accident, Mr. Hoffmann, the transfer?

Mr. HOFFMANN. It's certainly one of them when it comes to transferring the LNG into the on-shore tanks, yes.

Senator MIKULSKI. So, do you keep that or do you delegate that?

Captain KELLEY. I will keep that.

Senator MIKULSKI. So, you will keep that.

Captain KELLEY. Really, ma'am, in the case of Cove Point, it's a matter of the Calvert County Sheriffs trained and certified by our personnel providing the boat.

Senator MIKULSKI. The boat.

Captain KELLEY. And, the personnel.

Senator MIKULSKI. Okay.

Captain KELLEY. So, they are in the water along side.

Senator MIKULSKI. Okay, then this is my last question. In terms of Sparrows Point, what then will you provide for Sparrows Point?

We now understand what you'll provide in terms of the Bay, but now you are coming under a Bay Bridge, you are coming into a more populated area, you are coming into the port, we are part of the Capitol Region, we are part of a high-risk level for homeland security as well.

Now, who is going to provide the boats for the Sparrows Point, or has that not yet been determined?

Captain KELLEY. That has not yet been determined. It will be addressed in the Waterway Suitability Assessment, as well as the Waterway Suitability Report.

Senator MIKULSKI. Okay, and then, who would you ask then to provide in the Baltimore maritime waters, because, remember, you have Baltimore City, Baltimore County, though it's literally in Baltimore County Port, as you know as the Captain, a very able, I might add, Captain, the port encompasses Baltimore City, Baltimore County and Anne Arundel, with implications up to Harford. Who would be the maritime cops on those boat?

Captain KELLEY. There are two components that I'm looking at when I review the Waterway Suitability Assessment. I'm looking at the resources that are available in the port right now, and that may be anything from the Coast Guard through the various maritime organizations that have law enforcement authority in the port. That's their capability to do it, to enforce any type of security——

Senator MIKULSKI. But, who would do this? Were you going to ask the Baltimore County Police to do this?

Captain KELLEY. I will not ask them to do—them, in particular, to do it, it would be incumbent upon the facility and the vessel—the security—I'm sorry, the facility operator to do that.

It is my—I maintain——

Senator MIKULSKI. So, you would ask AES to kind of look around to see who they'd contract with?

Captain KELLEY. And, they are doing that as part of their Waterway Suitability Assessment.

Senator MIKULSKI. I'm not being sarcastic, nor in any way making a deleterious reference to AES, but it could be any company. So, the Coast Guard now says to the OES, hey, see what you can find out there?

Captain KELLEY. Actually, what we would be doing is looking at each one of the potential enforcers of the security zone, and to make sure that they have the authorities, that they have the capabilities, the competencies.

Senator MIKULSKI. So, it would have to be someone that already would come from local government. Number one, they couldn't do it through a private security firm.

Captain KELLEY. That is correct. Well, I would not—I personally, as the Captain of the Port, wouldn't go that way. My emphasis would be on making sure that there are authorities there, competencies, capabilities, and then certainly that I certify them.

Senator MIKULSKI. An ongoing certification.

Captain KELLEY. And, they are operating under my tactical control.

Senator MIKULSKI. Well, I know the Chairman has been more than generous with his time, my last question is this, was this decision to delegate this authority at Cove Point a policy decision or was it based on a budget decision?

Captain KELLEY. It was a policy decision.

Senator MIKULSKI. And, who made that policy decision?

Captain KELLEY. In the case of the Cove Point, it was my decision here locally, but it is part of our overall scheme.

Admiral SALERNO. It is reflective of national policy, Senator, that the Coast Guard Captains of the Port would engage with other port partners in the enforcement of Coast Guard established security zones. It's burden sharing, it's a shared Federal, state, local, and private sector responsibility.

Senator MIKULSKI. Well, I think it's burden shifting, and I think it's burden shifting, and I think it was motivated by the leadership of the Coast Guard, because of th shortfalls in their budget, and because of the unfunded mandates that we have given you, the United States Coast Guard, to stand sentry over our ports, our borders and so on.

I think you do a fantastic job. I really do, and we want to be with you, and I think we have to assess the budgetary situations, because I think now budget is driving policy, rather than policy driving budget.

Mr. Chairman, that concludes my questions.

Mr. CUMMINGS. Let me, just before we let you all go, let me just say this, that our concerns, I mean, I think the line of questioning of Ms. Mikulski is very clear, it goes to my major concern. I assume that when this Cove Point situation first came up the Coast Guard had agreed to do certain things, is that right, with regard to security?

Captain KELLEY. Yes, sir.

Mr. CUMMINGS. And, there came a point in time when that changed, is that correct? In other words, you changed some of the things that you were taking responsibility for. Let me put it like this. You brought in the Sheriff's office, and so other folk were doing some of the things that you would normally be—that you had agreed to do from the very beginning, is that accurate?

Captain KELLEY. Actually, sir, I believe it was more the facility themselves that reached out to Calvert County, to see if they would be interested in assisting them, obviously, for reimbursement for their costs, and that's where Calvert County said, yes, they would be interested in doing that.

Mr. CUMMINGS. So, in other words, the Coast Guard was not doing all the things that the Sheriff's office is doing now, is that correct?

Captain KELLEY. The Coast Guard is doing everything that we are expected—the level of security that we are providing right now would be supplemented——

Mr. CUMMINGS. I think——

Captain KELLEY. —by the Calvert County Sheriff's office.

Mr. CUMMINGS. —but this goes to my concern. We saw in deepwater that, and we're seeing it every day, that the Coast guard wants to do a lot of wonderful, great things, and the Coast Guard has been asked to do a whole lot of things, and the Coast Guard has said, we can do these things, but because of that stretching that I talked about a little bit earlier these things are not necessarily being done the way I think even the Coast Guard would want them done, as was evidenced by testimony in our deepwater hearing just last week.

And, I just think that we've got to at some point, we have a situation where we are post 9/11 now, and if people are looking, I think Senator Mikulski used the term, which I wish I had invented, she calls it targets of opportunity, but she's right. We've got targets of opportunity, and if we look at what happened on 9/11, no one would have ever thought that someone would be flying a plane into a building. And, here we have this situation, which I think is probably, not probably, it is, has potential for a worse situation. I say this also to you, Mr. Hoffmann, and I just, you know, I want to make sure that we are not still stuck in the pre-9/11 mind set, because this is post 9/11, and I think we just have to have an over abundance, a tremendous abundance of caution, and we have to assume for the worse.

Sadly, when we assume for the worse, it may be a little bit more costly, but we now have to synchronize, try to find a way to synchronize, Senator Mikulski, the duties of the Coast Guard and what you've been asked to do with the money and the resources that you need to do them, we've got to synchronize the two, because to be frank with you, to me, not right now, they are not synchronized.

And so, thank you all very much.

Mr. LATOURETTE. Mr. Chairman.

Mr. CUMMINGS. I'm sorry.

Mr. LaTourette.

Mr. LATOURETTE. Thank you, just a couple observations on this last series of points, because I think it's important.

Captain Kelley, I don't want anybody to leave this room thinking you've gone out on a lark, and it's my understanding that under the Maritime Transportation Security Act of 2002, which the Coast Guard has jurisdiction to administer, that each shore-side facility is required to develop and implement a detailed facility security plan that designates the facility security officer, and outlines actions to be taken to respond to a potential security incident. Is that your understanding as well?

Captain KELLEY. Yes, sir, that is correct.

Mr. LATOURETTE. It's also my understanding that the Congress amended the Maritime Transportation Security Act of 2002 and 2004, and those amendments encouraged joint partnerships, similar to the one that you now have with the Calvert County Sheriff's Department, is that your understanding as well?

Captain KELLEY. That is my understanding.

Mr. LATOURETTE. And lastly, just so we are clear, are you—how long have you been in the Coast Guard, sir?

Captain KELLEY. I've been in the Coast Guard since 1978.

Mr. LATOURETTE. Are you ever going to sign off on a security plan, at Cove Point or anywhere else in the jurisdiction that's under your charge, if you are not convinced that it's safe?

Captain KELLEY. I am going to be personally convinced that it is safe before I sign off on it.

Mr. LATOURETTE. Thank you very much.

Thank you, Mr. Chairman.

Mr. RUPPERSBERGER. Will the Gentleman yield?

Mr. LATOURETTE. Yes, I'm happy to.

Mr. RUPPERSBERGER. One question is, but do you have ultimate authority on whether or not this is approved?

Captain KELLEY. I don't have ultimate authority. However, sir, I do, in my Waterway Suitability Report, can deem whether the waterway is suitable or not.

Mr. RUPPERSBERGER. But again, my question, FERC has the ultimate authority, is that your understanding of the process?

Captain KELLEY. That is my understanding, it would go to FERC.

Mr. RUPPERSBERGER. Thank you.

Captain KELLEY. My Waterway Suitability Report is submitted to FERC for consideration in their environmental impact statement.

Mr. RUPPERSBERGER. Thank you.

I yield back.

Mr. LATOURETTE. And, just taking back my time, to Mr. Hoffmann, can FERC approve a proposal that doesn't have the water suitability, a positive recommendation from the Coast Guard?

Mr. HOFFMANN. Without a positive recommendation?

Mr. LATOURETTE. Yes, sir.

Mr. HOFFMANN. I think if the Waterway Suitability Report from the Coast Guard comes in with a negative finding, that would be a sign of some serious trouble for any proposal that had that outcome.

Mr. LATOURETTE. Well then, I know we are in a law school, and I don't want to parse words, but serious problems, does that mean it's dead on arrival, or that means it's got a bigger hurdle to work on?

Mr. HOFFMANN. Well, I've been told I'm allowed to be a historian. I can't be a fortune teller.

Mr. LATOURETTE. Right.

Mr. HOFFMANN. So, I can't tell what our Commission would do, but, you know, clearly to me any facility that doesn't pass muster with the Coast Guard, for being determined safe and secure for a waterway, the project probably will not go forward.

Mr. LATOURETTE. Thank you very much.

Thank you, Mr. Chairman.

Mr. CUMMINGS. Well, let me, I've got to say this. Let me be real clear. We've got 12, we've got 12, 12 new facilities under construction, and I know that each Captain has their jurisdiction, and I understand what Mr. LaTourette just said, but at some point, my point is very simple, if you don't match up, you can do all the planning you want, but if you don't match up the resources with the demand something is going to break. And, we can act like that's not a fact, but it is.

And, my point is, I understand, and again, I want to be clear, nobody is trying to beat up on the Coast Guard, I think the Coast Guard is a great organization, we are your biggest fans, but we want to make sure that when you get out there you've got what you need, period, because the only people that we're fooling is ourselves, I mean, and this goes to national security. This is serious business.

And so, what we are trying to do is make sure we match those up, and we understand that things are being adjusted in the various areas or whatever, but again, I said we've got 12, and we've got another 20 some where people are making requests. So, we can't just look at this just as a local thing, this is a big—this is the United States, this is big picture.

And so, we are stretching, stretching, stretching, stretching, but if the resources aren't coming in, like as they should, we've got a problem.

And, I just hope that you all, when you go back, you'll give all that consideration.

Mr. RUPPERSBERGER. And, following up on the Chairman's comments, you heard the testimony here today from the Governor, Senator Mikulski, Jimmy Smith, County Executive, you heard them all say that they don't have the resources, they have other jurisdictions within their counties and their state that they have to take care of also from a public safety point of view.

Are you going to consider their testimony and their position now, that they don't have the money to come in and to provide what's needed? I mean, I read off what happens in Boston every time a ship comes up, you have helicopters, you have police, you have to shut down bridges, are you going to consider all that when you make the recommendation of safety to FERC?

Captain KELLEY. Yes, sir, that is absolutely one of the main considerations in my review of the Waterway Suitability Assessment, and it will be reflected in my report.

If the capabilities and the capacity to provide security for the vessel, for the facility, throughout its transit and while it's at the docks, so to speak, I won't deem the waterway suitable.

Mr. RUPPERSBERGER. But, Mr. Hoffmann gave you a lot of authority in this hearing, so I hope you do it well.

Thank you.

Mr. CUMMINGS. When is that report coming out, Captain Kelley?

Captain KELLEY. I replied to AES, based on their initial submission for their Waterway Suitability Assessment, I did not provide them with a deadline to provide me with the additional information that I asked for.

So, pending their response to me, is going to be, I guess we start the clock again, the 90 day.

Mr. CUMMINGS. I'm sorry, the last words you said I missed.

Captain KELLEY. We have a 90-day window within which we have to provide the report, based on the Waterway Suitability Assessment. I have sent back correspondence to AES asking for more information.

Mr. CUMMINGS. Very well.

All right, thank you very much, and thank you for your service, we really appreciate all of you.

Thank you.

Mr. CUMMINGS. We'll call our last panel now. Aaron Samson, Mr. William Doyle, Dunbar Brooks and Sharon Beazley.

Thank you all being with us today. We'll first hear from Mr. Aaron Samson, Managing Director of AES.

STATEMENT OF AARON SAMSON, MANAGING DIRECTOR, AES; WILLIAM P. DOYLE, DEPUTY GENERAL COUNSEL, MARINE ENGINEERS' BENEFICIAL ASSOCIATION; DUNBAR BROOKS, CHAIRMAN, TURNER STATION DEVELOPMENT CORPORATION; SHARON BEAZLEY

Mr. SAMSON. Thank you, Chairman Cummings and Ranking Member LaTourette, and Members of the Committee. My name is Aaron Samson. I'm the Managing Director of LNG Projects for the AES Corporation.

AES is one of the world's largest power companies operating in 26 countries, with our home offices in Arlington, Virginia. We are a good corporate citizen of Maryland today, and operate the only clean coal plant in the State of Maryland in Cumberland County.

AES has proposed to build the LNG import terminal at Sparrows Point, in an effort to introduce a new supply of natural gas into the Mid-Atlantic Region.

A summary of my written testimony today will address the need for, and alternatives to, the site selection criteria, the safety and security, and impacts on port operations.

To address need, natural gas has become the fuel of choice in both the United States and the Mid-Atlantic Region, due to its clean burning nature and the efficiency of its use. In order to combat the threat of global warming, increased natural gas use must be part of the solution. A modern natural gas plant emits half of the greenhouse gas emissions of a modern coal facility.

This increasing demand, however, is outpacing supply of traditional resources. This demand has been confirmed in the "Energy Transition Report 2007: Maryland's Energy Future" that was prepared for Governor O'Malley in February of 2007. The transition report stated natural gas needs for Maryland have grown. Of the fossil fuels, natural gas is the cleanest burning for energy generation. Maryland imports over 99 percent of its gas through interstate pipelines, primarily, sourced from the Gulf of Mexico. Supply and cost disruptions are possible, as seen in 2005 and 2006, as a result of Hurricane Katrina.

The report went on to say, currently, pipeline capacity is also constrained, interstate pipelines that serve Maryland have been fully subscribed for several years.

With regard to LNG, the report said it is unlikely, with the exception of LNG, large increases in gas supply in Maryland will occur.

Additionally, natural gas prices set the price of electricity in the State of Maryland over 50 percent of the time. So, not only importing gas will reduce the price of gas, it will also reduce the price of electricity in the State of Maryland.

Any alternative to the proposed LNG terminal at Sparrows Point would require the construction of thousands of miles of pipeline to provide the equivalent amount of new gas supplies to the Mid-Atlantic Region. This would have a significantly greater environmental impact, would be less reliable than importing the LNG directly to the demand center, and would cost more.

The AES site selection process included review of land use compatibility, technical and economic feasibility, safety and security, land owner environmental impacts, and, primarily, remote siting.

AES considered only locations for the terminal and associated LNG transit route that are at all times greater than one mile from residential communities and population centers. These guidelines are not a requirement of the FERC process, but they are supported by the Sandia National Laboratory report and the recently released General Accounting Office report that the outer limit of risk to the public is, generally, considered to be one mile.

The additional point I would like to make, there was a lot of talk this morning about Cove Point, and in June of 2006 the Maryland Power Plant Research Program issued an independent risk assessment on the Cove Point expansion. The Cove Point facility is going through a significant expansion currently. That risk assessment done of the State of Maryland concluded that the facility would fall within a range considered acceptable. It's important to note that the AES terminal is either further from residential areas, and the shore-side unloading platform associated with the AES project is also further from residential areas than the off-shore unloading platform at the Cove Point facility. I've included with my written testimony aerial photographs of both these facilities.

One of the other areas that's been raised concern is that this would create a high-value terrorist target. In addressing this, AES hired Richard Clarke, former White House Security Advisor to three presidents on national security and counter-terrorism. Mr. Clarke performed a review of the proposed AES Sparrows Point facility, utilizing the same methodology he was hired for by the Attorney General of Rhode Island to review the proposed facility in Providence that was ultimately denied by FERC. Mr. Clarke's assessment was that he characterized the location as being a low-risk level, and concluded that any risk associated with this project can be effectively managed. A summary of Mr. Clarke's findings is also included with my written testimony.

As it relates to impact on the port operations, an important factor considered by AES in siting here was to avoid or minimize disruption to commercial recreational marine traffic while LNG vessels are in transit or at the berth. In a proactive effort to minimize this disruption, AES sought the advice and input from the Baltimore Maritime Community, Chesapeake Bay Pilots, the Baltimore Tug Operators, and the Maritime Institute of Technology and Graduate Studies, MITAGS, located here in Maryland. in fact, numerous real-time ship berthing maneuvers were performed at the MITAGS simulator with the assistance of the Bay Pilots and the existing Tug Operators.

These berthing simulations were carried out with the support of the three new tractor tugs AES has proposed to add to the Baltimore Tug Fleet to support these LNG operations.

Current vessel traffic transiting the Chesapeake Bay to the Port of Baltimore has significantly decreased in the amount of vessel traffic over the past few decades, from a little over 4,000 arrivals in 1975 to must over 2,100 ship arrivals in 2005. The AES project would introduce approximately 100 to 150 vessels per year into the Chesapeake. This modest increase in vessel traffic, compared to historical numbers, and the addition of new modern tractor tugs, will help maintain the economic health of the Baltimore maritime industry.

The security zones that have been discussed significantly today, I want to address a number of issues related to the security zones. The same Federal regulations that operate to require security zones for LNG vessels, because they carry what's called certain dangerous cargo, or CDC, also apply to a number of other vessels that transit the Chesapeake today, including petroleum vessels, propane ships, and ethanol vessels. The security zones would also apply to cruise ships.

The introduction of additional LNG traffic in the Chesapeake will have limited or no impact on existing large vessel traffic in the Bay or for vessels calling at the Inner Harbor. Existing ship management protocols utilized by the Maryland Pilots Association would ensure that orderly inbound and outbound traffic is not delayed or otherwise negatively affected.

Once at the terminate site, LNG ships would have no impact on large vessel traffic, as that traffic would be well outside the established security zones, as they enter the Inner Harbor in the existing shipping lanes.

LNG shipping in the Chesapeake may cause minor inconveniences to smaller vessel traffic, due to the enforcement of these security zones around the LNG ships. The time interval during which the security zone applies at a given point is a function of the ship's size and the ship's speed. Vessel speeds north of the Bay Bridge average ten to 12 knots, and, therefore, the impact time for recreational boaters for the security zone enforcement is less than four minutes, and limited to two to three times a week.

It's also important to note that such restrictions would only apply to an inbound LNG vessel, and do not apply to an outbound LNG vessel in the Chesapeake.

Mr. CUMMINGS. Mr. Samson, I'm going to have to ask you to wrap up.

Mr. SAMSON. The impact to recreational boaters at the site has been talked about also significantly. It's important to understand that when the slower maneuvering operations to berth the ship are underway, that that is about a 45-minute evolution, and that boaters can transit to the west side of Ft. Carroll, and that at no time will access to Bear Creek be completely cut off during this maneuvering process.

Thank you.

Mr. CUMMINGS. Thank you very much.

Mr. Doyle.

Mr. DOYLE. Thank you, Chairman Cummings, Ranking Member LaTourette, and the rest of the Committee for allowing me to speak today. Safe and secure transportation of Liquified Natural Gas to the United States is of critical importance, and we all appreciate your holding this hearing today.

My name is William Doyle, and I am Deputy General Counsel of the Marine Engineers' Beneficial Association, and a United States Coast Guard Licensed Officer in the Merchant Marine.

For 137 years MEBA has represented Coast Guard Licensed deck and engineering officers serving in the commercial and Government fleets. Despite our presence in nearly every aspect of the maritime industry, there are practically no Americans employed on LNG ships today.

The worldwide demand for LNG is increasing at such a tremendous rate it is very difficult for the maritime industry to keep up. With this increase in demand for LNG comes an increase in demand for qualified mariners to crew the LNG vessels.

Currently, there is a worldwide shortage of qualified personnel. Keep in mind that this shortage of personnel is based on studies conducted in the international foreign flag fleet, and not based on what the United States has to offer by way of personnel.

Anyway, it has gotten so bad in the foreign flag fleet that some ship operators have resorted to poaching officers from each other, paying as much as $22,000 per month to entice ship-board personnel to switch companies.

As the size of the world LNG fleet expands, and the qualified mariner pool shrinks, there is a major concern that education and training standards will suffer. If that happens, the likelihood of an accident or incident substantially increases.

We also know that security is a major concern, particularly, in the siting of land-based terminals. MEBA believes that the greatest threat to an LNG tanker would come from a knowledgeable crew member deliberately sabotaging a vessel. Therefore, we must ensure proper vetting of LNG crews.

There is no uniform, completely trustworthy system for vetting foreign mariners, as this is next to impossible under the current system. Background checks of the level of thoroughness cannot be conducted on Americans by the United States Coast Guard and the Transportation Security Administration are only performed on Americans, and not on foreign crews.

While the Coast Guard does require crew lists from vessels entering U.S. ports, they have no real way to be sure that those foreign crews on board those vessels are who they say they are. U.S. Merchant mariners, on the other hand, receive their credentials to work from the United States Coast Guard. Foreign seafarers do not. U.S. mariners undergo extensive background checks through the Federal Bureau of Investigation. Foreign seafarers do not. U.S. mariners are vetted through the National Driver Record Database. Foreign seamen do not.

Soon, U.S. mariners will be subject to terrorism background checks through the Transportation Security Administration. Foreign seafarers will not. U.S. merchant mariners are U.S. citizens, or persons lawfully admitted to the United States for permanent residency. The mariners crew on these LNG tankers are not.

MEBA solutions to these problems is based on common sense and very simple to achieve, utilize U.S. crews on LNG vessels calling on U.S. ports, both deepwater and land-based. Americans are available, well-trained, economical, and thoroughly vetted. Placing U.S. mariners on board these LNG tankers will go a long way to ensuring the safety and security and the American public deserves nothing less.

The United States is a leading producer of mariners. Many of the state and Federal maritime academies and union training schools have added or updated their LNG curriculum. For instance, my training facility, the Calhoun MEBA Engineering School, just over the Bay Bridge in Easton, Maryland, recently installed a state-of-the-art vessel and LNG bridge simulator. Right now, MEBA has a pool of qualified and experienced senior level mariners who are ready, willing and able to sail LNG tank vessels.

With the help of Congress, and the authority given to the Maritime Administration over deepwater ports, MARAD has been able to convince some LNG operators to expand their LNG crewing practices to include U.S. citizen crews. These companies, Suez LNG, Freeport-McMoRan, and Excelerate Energy, must be commended.

MEBA has recently a Memorandum of Understanding with the innovative LNG company Excelerate Energy, that will allow our members to sail on their international fleet of LNG tankers and worldwide. Excelerate is a company that recognizes the looming worldwide shortage of LNG officers, and is doing something to address this shortage before any significant problems arise.

The risk of an accident or security incident on a vessel servicing a deepwater, off-shore LNG terminal is a concern. However, this concern pales in comparison to what would happen if there was a such an incident, intentional or otherwise, to a land-based LNG terminal when more people, property and overall public safety are at risk.

Under current law, the Federal Energy Regulatory Commission and the Coast Guard have oversight over the land-based terminal permitting process, while the Coast Guard and the U.S. Maritime Administration have oversight over the process for deepwater ports.

We feel that it is critical that FERC and the Coast Guard work with the operators of land-based terminals to actively encourage or require the use of Americans on these vessels in order to advance the interests of safety and security.

We also urge Congress to review the permitting process for land-based terminals, and give the Maritime Administration a similar role in the permitting process of land-based terminals as they have with deepwater terminals, to ensure that their mission of promoting the U.S. Merchant Marine plays a part in this process.

Thank you. I'll take any questions.

Mr. CUMMINGS. Thank you very much.

Mr. Brooks.

Mr. BROOKS. Thank you, Chairman Cummings and Ranking Member LaTourette. I want to thank you for allowing me to testify for residents of Turner Station, Maryland, regarding the safety and security of the LNG facility.

We are 1.1 miles from this, we are at ground zero for this facility. Because of our close proximity to the facility, and the fact that 3,000 people in our community have limited egress for evacuation in the event of an LNG catastrophe, it necessitates that we have a comprehensive plan and highly-detailed safety measures that should be developed by LNG facility operators, Federal, state and local First Responders, and the Coast Guard.

Turner Station residents have never been presented by AES or any other entity a plan that addresses a comprehensive way for notification or evacuation of our community in the event of a terrorist attack or an accident in an LNG facility.

It was suggested by AES that a horn be sounded at the LNG facility that would somehow warn our residents more than a mile away. First Responders for the State of Maryland and Baltimore County have stated they lack the resources and are incapable of dealing with an LNG tanker breach with a vapor cloud and resulting fire.

The Turner Station residents are opposed to the siting of this facility so close to our neighborhood. We've been informed that these large LNG tankers that come into the Baltimore Harbor will add considerable responsibility to the U.S. Coast Guard mission, and will severely strain their already diminished resources. The impact of bringing these LNG tankers into the Brewington Channel and Bear Creek, and honoring the exclusion zones that must surround these ships, will suspend commercial and recreational boating in waters just off our shore for extended periods of time.

The practical effect of permitting this facility means that you have 150 super tankers traversing the Chesapeake Bay and the mouth of the Baltimore Harbor. This means that on any given day there will be a super tanker either coming up the Chesapeake Bay, leaving the Chesapeake Bay, or docked, or docking in the Brewington Channel. This means that the Coast Guard and other Department of Homeland Security personnel must be present on a 24/7 basis every day of the year in order to marginally protect the LNG vessels.

Our community demands a highly-effective safety and evacuation plan. They should be developed, and since it hasn't been developed, for that reason alone the project should be prohibited because it's a terrorist target.

Irrespective of AES official statements saying that we are safe, because there aren't that many of you, and despite Richard Clarke's and AES' consultant statement in a February 1, 2007 Baltimore Sun article, in which he stated, "An operation at Sparrows Point would be safe. Terrorists want to kill people, they want to kill hundreds of people." That flies in the face of the report that was just mentioned, that he did for Rhode Island, in which he made this statement in the beginning of the report, "As to the LNG ship, the creation of restrictive waterways around an LNG tanker and the use of armed Coast Guard patrol craft, provides little assurance that a determined terrorist group would be stopped before attacking the tanker, and with explosive-laden vessels," and in this case it was Narraganset Bay, which is home to 1,000 small craft, thousands of small crafts.

He went on to say, "We are unaware of any analysis performed by counter-terrorism experts in the U.S. Government, such as the U.S. Special Operations Command, that would demonstrate the ability of the Coast Guard and the Rhode Island Police to prevent attacks by determined and skilled terrorists, when in either the urban off-loading facility and/or the LNG tanker during the 29-mile inland waterway transit."

The thing that says to us is, this is a perfect description to us of our Chesapeake Bay and the dangers that we face, so we are left with, what statement are we supposed to believe by Mr. Clarke, the one that he says that we are safe or the one in which Rhode Island is addressed.

The Turner Station community is surrounded by industry. The northwest portion of our community is less than 1,000 feet from the

Dundalk Marine Terminal. Te Carnegie Plats community, which is adjacent to ours, abuts the Dundalk Marine Terminal. Any threats to our communities also imperil port operations at the Dundalk Marine Terminal. Any cessation of boating traffic in the Chesapeake Bay and the Baltimore Harbor will have a negative effect on marine terminal operations. Any LNG related catastrophe or catastrophic event that impacts the residential communities of Turner Station, Carnegie Plats or Waters Edge also place in peril private and state workers located at the Dundalk Marine Terminal.

Our communities have been admonished by the AES officials to trust the science, but the February, 2007 GAO report entitled, "Public Safety Consequence of a Terrorist Attack on Tanker Carrying Liquified Natural Gas," need clarification. It concludes that we cannot make wise LNG siting decisions with only the results of existing research, such as the Sandia National Laboratory studies. The GAO expert panel recommends that further research needs to be conducted, and we think that until that research is completed that all decisions on LNG siting facility should be halted and that Congress get a better understanding of the consequences.

Our three communities, Turner Station, Carnegie Plats, and Waters Edge, in the event of a catastrophic event and evacuation, all converge at a single exit point to leave our peninsula. The prospect of 5,000 people within a two-mile range trying to all leave a single community at a single exit point is a recipe for disaster, and it demands adequate planning.

Our community, along with others, have raised the myriad of environmental problems that will emerge associated with the dredging of the Brewington Channel, and from the destruction and the disturbance of the Chesapeake Bay aquatic life and a lack of a plan to dispose of 4 million cubic yards of dredge oil.

I want to thank the Subcommittee for allowing this testimony on behalf of Turner Station residents. We urge you to deliberate carefully and protect our port, which is our livelihood and our lives.

Thank you.

Mr. CUMMINGS. As we go to Ms. Beazley, I want to thank you, Mr. Brooks and Ms. Beazley, for your leadership, and I want to thank all the community members who have come out here today, and you are standing up, not just for yourselves, but for those who live around you. And, as someone said to me outside, for generations yet unborn.

Mr. BROOKS. That's right.

Mr. CUMMINGS. And, we really do appreciate your leadership. We know it's taken a phenomenal amount of your time, but we really do thank you.

Ms. Beazley.

Ms. BEAZLEY. First of all, last night when I was thinking about coming here, I thought to myself, you sit down to your computer and you are going to write something, you want to make sure that you get—do the best that you can possibly do, because you have tens of thousands of people depending on you. That's the position that I found myself in over the last 18 months.

And, finding myself in that position, I thought that I had to come here today and educate, because when I started this process with community leaders 18 months ago I understood that it was an education process.

Well, I ripped up everything I was going to say. I filed it away, because today I'm proud, I'm proud of all of you that sit up there. I'm very touched. I don't have to educate you. Everything that I was going to say, a lot of what I'm going to say, I'm going to add some things, but I am so proud to be from a community that has been as proactive as our community has been.

I will tell you that we are the only community in the United States that got together, and when we learned we educated each other, we knew that we needed a voice, we needed a voice in FERC.

So, how many communities could organize, get together, and put together a 4,000 plus comprehensive EIS? I sat in a room day after day, week after week, and I watched hundreds of volunteers who brought their special talent forward, and we sat there, these kind of documents would cost millions of dollars, we had zero dollars, but we had lots of passion, lots of heart, and lots of determination.

We put this EIS together, and when FERC came to our community we presented it, because you know what we didn't want to have happen, we didn't—you talk about terrorism, we do feel—we've already experienced terrorism. We've been terrorized by Corporate America. They've come in, they've said we know best, you don't, you've lived here forever. I'm sure most of you know that our community, most of our mothers, our fathers, our aunts, our uncles, my age have to take care of them today, because Corporate America walked out on our community, they took their pensions, they took their healthcare. We worked day after day in a mill that probably jeopardized our lives.

The peninsula where this is being proposed, you must understand history to go into the future. What was a peninsula, was an island, in 1893 when the steel industry started, was a 500 acre island. Today, it's registered as a 2,600 acre peninsula, 100 years later. Well, guess—God didn't make that land, guess what made that peninsula, that peninsula was created by contaminated toxins, the byproducts of the steel industry at a time when there was not regulations.

So, we went from an island to a big peninsula. No one has discussed the geological situation we are faced with. You have a tanker come in, there are three proposed tanks, bulk storage tanks, each to hold 40 million gallons, each 40 million gallons has the energy content of 55 Hiroshima bombs. The bottom line is, okay, let's put all of this right here on the peninsula, but what we must remember, ladies and gentlemen, every gallon of that LNG is approximately the weight of eight pounds per gallon. I think we can all add, take eight pounds a gallon, multiply it by 40 million three times, and then take the weight of the steel, the infrastructure, the concrete, the barrier, and tell me that you can safety put that kind of weight on a proven filled area that is not stable and is contaminated. That's one point that no one has brought up.

The second point is, that site is less than 12 miles from BWI. There are many people that can go over there, if you have a license you can rent a plane. You can rent a plane, and you can come within couple matter of minutes, how is Homeland Security going to protect that? Couldn't protect it with the World Trade Center. You can get a private plane and you could fly into that facility.

Just recently, in 2006, something I want to bring up is that the Sandia National Laboratories did come out with a most recent report that was just published in January of 2006, which states, their summary, "A flammable Liquified Natural Gas vapor cloud could extend 7.3 miles." This is documented. You have access to it.

Another point I'd like to bring up is, how about the insurance? I have one focus and one focus only, the health, safety and quality of life of my people. Now, for 100 years we've endured contamination, we've endured dumping on Dundalk, and now an industrial situation is going—I'm not against LNG, but for God sakes, put it off shore, don't put it near my people.

Let's talk, let's talk about something. You know what, we are only a byproduct, we are just—we are passing through. This proposal is passing through our community. BG&E met with me, and told me, the people at the top, they would not be buying from AES.

Secondly, we are a very small state, we have the largest LNG facility already. Not one ounce of this product would be going to our community. It would be transported from Sparrows Point to Pennsylvania, to provide energy, LNG, for the northeast. Now, why is that our people have to sit here and be terrorized, be in fear and anxiety, to provide to others. It's not that I don't care about others. The bottom line is, there are no advantages. This is ill-conceived, and I want to add one more thing.

AES, there are five Commissioners that decide our fate. Those five Commissioners have a lot of power. Someone asked the question today to the Governor, is there something we could do to help and change. Absolutely, there is. Congress could do something. The Energy Act of 2005, and the present Administration, changed everything, they gave all the power to FERC. I'd like to see there be Governor veto power. There needs to be a camaraderie. We don't need to have five people, and I have a concern. When I say we've been terrorized, I've been told by some people, you know, that two of the principals of the proposing company are ex-FERC Commissioners, and I was told by somebody smugly one day that it's you know, not what you know, and that these Commissioners, since they are principals in the company proposing this, they are ex-Commissioners, you know, they have their ins in Washington, they know the lobbyists, they know this, they know that, and they think that we are powerless, and because they know who they know, and they have the money they have, that we are just the ant fighting Godzilla. Well, you know what, ladies and gentlemen, what I saw today here, I saw every Representative we have, I could not thank you more, I could not be more proud of you, because we are united, you get it, I trust you, and I believe all will be well.

Thank you.

Mr. CUMMINGS. Thank you very much. Thank you very much. I found your testimony so interesting I didn't cut you off, and I thank you.

Let me just ask a few questions of you, Mr. Samson.

What other LNG terminals does AES operate in the United States?

Mr. SAMSON. AES doesn't operate any LNG terminals in the United States. We own and operate the LNG terminal and co-located gas fired power plant in the Dominican Republic.

Mr. CUMMINGS. So, as far as the United States, this is new for you then, is that right? As far as the United States is concerned.

Mr. SAMSON. As far as the United States, we don't own an LNG facility. You have to remember there's less than 50 of these in the world.

Mr. CUMMINGS. Right.

Mr. SAMSON. So, when you look at the corporate entities that actually own them, it's a very small list.

Mr. CUMMINGS. Okay. In the event of an accident at Sparrows Point, what provisions are in place to compensate private property owners and those who may suffer injuries and those who sadly might perish?

Mr. SAMSON. It's a very difficult question to pose, in the fact that it will, one, depend on what is the cause of that incident, whether or not it's a facility incident, whether it was a negligent incident, whether it was a terrorism attack incident, whether it was an incident affecting the ship and, therefore, ship owners may be in the liability chain, and so forth.

But——

Mr. CUMMINGS. I mean, are there insurance policies and things of that nature, I assume?

Mr. SAMSON. Clearly, the facility will have what would be characterized as fairly massive general liability policies for claims against such an event.

Mr. CUMMINGS. And, are costs associated with a major accident at Sparrows Point likely to be left to property owners? In other words, the problems, the costs of addressing it, or even state or local government? In other words, if there are problems, you know, I just heard some testimony a little while ago, and I don't know how accurate this is, that said, I forget who said it, that, I think it was Jim Smith, the County Executive, amongst others, said that the way you deal with the fire is you just kind of let it burn out, and the question I guess is, what happens in the process of the fire burning out?

Mr. SAMSON. Well, I mean, there's two things about that you need to take into account. One is, we have cited this, whether it's the Sandia study or the General Accounting Office, the experts in the world are, basically, in general agreement, or strong agreement, that a mile is the outer impact of a potential second degree burn within 30 seconds. That doesn't mean anything gets ignited at that distance. That means if you don't have your shirt sleeve covering your arm, your arm could get burned. It doesn't mean your arm will start on fire, it doesn't mean your house or your community will start on fire at those distances.

And secondly, the amount of time that we're involved here, when you look at the Sandia study, and you look at this worse case event, and the theory that you let it burn out, this event in order to reach out a mile has to be such a sequence of things happening all at the same instant, it lasts for less than ten minutes. There's not an evacuation issue here. There will be an emergency response plan as part of the FERC process, and reviewed through the Federal and local agencies, but we are talking about the scenario that can possibly reach a mile of heat, not flame, not igniting houses, and last less than ten minutes.

Mr. CUMMINGS. Well, I hope that it never happens, but to that person who it might affect, it's a major problem, it would be a major problem.

Mr. SAMSON. I agree.

Mr. CUMMINGS. Yes.

Let me ask you this. I found that if you go back to what Ms. Beazley said, very interesting testimony about—and I'd ask a question in regard to this, this whole question of all of this material being dumped by Bethlehem Steel over the years, and I'm just wondering, you all have a program to recycle in the case of dredging, is that right?

Mr. SAMSON. Yes.

Mr. CUMMINGS. And, to kind of—could you describe that program and what the cost would be associated with that?

Mr. SAMSON. Well, the program will, basically, take the dredge material, categorize it, depending on the potential contaminants in it. So, if you look at the first two or three feet of sediments that have built up in these areas over time they may have some level of contamination in it.

As part of the FERC process and the application process, we've done extensive borings and have, basically determined, as the state also has followed behind us with additional borings, that the potential dredge spoils here in the upper areas are no different than is dredged from the Baltimore area now. So, this upper area may have some level of contamination.

Because we are at an older shipyard, we are actually dredging into newer material that is expected to be very clean, and, therefore, what that can be recycled for will be different than the upper layers, and, basically, the recycling program can be mine reclamation, it can be parking lot base, where you take this material, you dry it, you add Portland cement to it.

As it relates to cost, it's an expensive process, and dramatically more expense than the $2.00 a ton disposal fee at a Hart-Miller Island disposal facility, that we understand and have committed we are not going to utilize port administration disposal sites. So, we are talking about, on a good day, we are hoping that could be $20.00 a ton, $20.00 a yard, as high as $30.00 a yard. So, you are talking about an overall impact to this project of $80 to $120 million.

Mr. CUMMINGS. What types of physical assailants could the LNG storage tanks withstand? You know, one of the things that we are concerned about, I mean Mr. LaTourette made a very, I think pretty accurate statement that it's one thing to be concerned about the storage itself, it's another thing to worry about attacks. And, I'm just wondering what—just where you are on that.

Mr. SAMSON. Well, I think——

Mr. CUMMINGS. And, what things did you all take into consideration? You've heard the witnesses talk about their concerns.

Mr. SAMSON. —and I have.

Mr. CUMMINGS. And, I know you don't live within one of these situations, but they do, and you have to understand that their frustration is great because they realize, I think Ms. Beazley said it best, the big companies come in, they do their thing, and they still have to raise their children, and live, and play, and work, and go to church in these communities.

Mr. SAMSON. I understand that, Chairman.

Mr. CUMMINGS. You don't plan to live there, do you?

Mr. SAMSON. I actually proposed one of these less than a mile from my house.

Mr. CUMMINGS. Okay.

Mr. SAMSON. So, I mean, I do understand it, and maybe it's my belief in the science and the technology.

Mr. CUMMINGS. Where is that, where would that one be?

Mr. SAMSON. In Haddam Neck, Connecticut.

Mr. CUMMINGS. Okay.

Mr. SAMSON. So, I—you know, maybe I'm foolish, but I believe in the science and the technology, and as it relates to the shore-side facilities, I think the risk and the worry that people have is not at the shore-side facilities as much as it is the ship, because if you put a hole in a ship it's leaking into an infinite heat sink that will very rapidly cause that LNG to become a gas cloud.

On shore, LNG leaking on shore will rapidly freeze the ground, lose its ability to gain heat, and very quickly stop vaporizing.

The LNG tanks proposed at Sparrows Point are dramatically different than the ones that are at Cove Point today and the ones that are here in Baltimore. So, there's three types of LNG tanks, this is a third generation of LNG tank, where the secondary containment isn't on earth and berm if there's a tank failure, when FERC talked about the exclusion zones that the tank failed and filled it's earth and burned, and, therefore, that contained pond was on fire. Here, our secondary containment is a concrete outer wall, so that these tanks are inner tank with insulation, an outer carbon tank, and then up to the three foot of concrete, and the dome on this tank is also concrete. So, this is a third generation LNG tank, dramatically more safe from any type of missile attack that makes any sense, or even small aircraft attack.

Mr. CUMMINGS. Now, what kind of security are you all planning for Sparrows Point, if any?

Mr. SAMSON. Well, an overall security plan will have to be put in place that satisfies FERC and the various Federal agencies that will be involved in that, and it will include a number of high-tech components, most of which won't get talked in hearings like this, including both in water and out of water surveillance and 24-hour manned security.

Mr. CUMMINGS. Mr. LaTourette.

Mr. LATOURETTE. Thank you very much, Mr. Chairman.

Mr. Doyle, I want to start with you and thank you and members of your organization for reaching agreements with at least a couple of shippers in this regard, and I think that Richard Clarke, who has been quoted a couple times here at today's hearing, I think he wrote a book and talks about a terrorist riding in on an LNG ship, and that's how we would reach this conclusion.

So, I would encourage you at MEBA to continue reaching out to operators and replacing foreign sailors with certified U.S. American mariners.

And, just a short commercial, I would commend to you a piece of legislation that I've introduced on merchant mariner credentialing, and anything you could do to sort of shove the new Majority to give us a hand on getting your credentials quicker we would be very grateful for your support.

And, Mr. Brooks, you quoted Mr. Clarke twice, and I know in this instance at Sparrows Point he's the consultant who was retained by AES, and in the Rhode Island situation, who was writing the check for his evaluation?

Mr. BROOKS. It's, the firm was Good Harbor Consulting, LLC, it was for the Attorney General of Rhode Island.

Mr. LATOURETTE. Okay. So, in this instance he found Sparrows Point to be a safe location, and he was retained by the gas company, and there he was retained by someone who didn't want the Rhode Island facility, is that a fair observation?

Mr. BROOKS. Well, I'm only going by the observations that he made that raised the concern with us, because we also had a statewide task force that looked at this document, and we wanted, we actually asked for a similar document and a study to be conducted in Maryland, I don't know if Mr. Clarke would have been the principal investigator on that one, though.

Mr. LATOURETTE. I got you, and I'm not casting aspersions at Mr. Clarke, but like the Chairman, and I don't know who else, I practiced law for a number of years, and I always found that when I was retaining an expert, if I was paying——

Mr. BROOKS. You get what you pay for.

Mr. LATOURETTE. —well, if I was retaining the expert they always seemed to say what I wanted them to say, and vice versa.

And, let me make this observation, because I have a nuclear power plant in my district, and actually my house, it's not very comforting when you talk about evacuation routes and things like that, my house is in the kill zone, and that, you know, as a homeowner, and as a father, that really doesn't bring you a lot of comfort, that you are in the kill zone.

But, I come to these discussions because, again, it's my experience that everybody wants gasoline to be $1.00, everybody wants to heat their home in the wintertime for, you know, $40.00 or $50.00, but nobody wants it where they live. And, I sort of differentiate between facilities that you move to and facilities that move to you. You know, we have a lot of railroad tracks, for instance, and I remember a constituent called me up and said, man, I hate the train noise, can't you do something about that?

And, I said, well, when did you buy the house?

He said, last year.

And, I said, well, wasn't the train track there when you bought the house?

I do think that there's a different standard, and that's why, Mr. Samson, when I come to you I think that there is a different standard that when you are talking about going into a neighborhood and constructing a new facility, that maybe there's a requirement that more be done.

And, having said that, I have, based upon my knowledge of the industry, I think LNG technology is safe, and I have attempted to say during the course of this hearing a couple of times, that I think the greater risk is the terrorist riding in on the boat, is the person, as Ms. Beazley has suggested, rents the airplane at BWI and flies it into the facility, and the bigger risk from this technology are people that don't want to—don't wish us well.

And, on that, I heard you, in response to the Chairman's question about, we did learn from a previous panel that the state does retain authority under the Clean Water Act to issue the 401 permit, and I think the only change that the Energy Act of 2005 made was that it indicates that if the state improperly withholds that you can go to court and sue them and we'll figure out whether it's been improperly withheld.

And, I was interested in your comment about borings. Are those borings that you've taken of the sediments, are they proprietary, or are those things that the company could provide to the Subcommittee?

Mr. SAMSON. We can provide those to the Subcommittee. They are publicly available.

Mr. LATOURETTE. Okay, and since I'm not smart enough to go get them where they currently are, could you maybe get them to the Subcommittee?

Mr. SAMSON. We'll send them to you.

Mr. LATOURETTE. And then, the reason that I bring this up is, again, Ms. Beazley, I'm not familiar with the Republic Steel operation, but I live, you are going to want to think nobody is going to want to go where I live, because we not only have a nuclear power plant, but we also have, we are one of the areas of concern in the Great Lakes Contaminated Sediments, it's taken us 35 years to put this first shovel in the ground, and the problem is, once you stick that shovel in the ground the PCBs, or the metals, or whatever happen to be in that muck, got up, and they get turned around, and in my case it's Lake Erie.

And so, if you could provide those borings, I think that that would be interesting, and I think that sometimes these dredging projects are a little more complicated than we think. I mean, in our case we had to build a facility, containment facility, that's the size of five football fields, because you can't put it anywhere else.

But, the question I want to ask you, and it was hit upon a little bit by Mr. Brooks and Ms. Beazley, the evacuation route, and again, I sort of approach this the same way, there's a nuclear power plant up in New York called Indian Point, and there's a big brew-ha-ha now that the people that live near Indian Point are saying, you know what, there's no proper evacuation route in case something, God forbid, should happen.

And, using my own, you know, shame on you if you move close to something, when you sort of peel back the onion you find out that the plant was here, and everybody—these developers just build right up to the plant, so it really shouldn't surprise you that there's a problem with the evacuation route.

I thought I heard one or both of these witnesses indicate that if there is a problem at this proposed site at Sparrows Point, that there's no way for these folks to get out of town. Is that right?

Mr. SAMSON. I think one, we would disagree, we think there's two routes out of the different communities involved, and secondly, I want to get back to, this isn't a new facility, and that in this worst case accident that there's three tanks ruptured, and that the heat can reach out a mile, this event isn't long lasting. There's not an oil sheen left on the water when LNG is done burning.

Mr. LATOURETTE. Right.

Mr. SAMSON. It is over in under ten minutes, so that, for this heat to actually reach that far, all of it has got to get consumed in ten minutes for that flame that's burning in a 500-meter pool to reach that far.

So, it's not that we ignore evacuation——

Mr. LATOURETTE. Right.

Mr. SAMSON. — that in the worst case scenario it's over before anybody gets to their car.

Mr. LATOURETTE. Well, and let me ask you, because my knowledge is not as intense as maybe it should be on LNG, and I don't think that LNG catching on fire is the big problem. I mean, is it not, and you can correct me if I'm wrong, I think the big problem with LNG is that when there's a rupture, and the cloud happens, if there's an ignition point outside, not caused by, you know, the puncture, whatever punctures the tank, that if the cloud is ignited, that that's really the problem. Is that not right?

Mr. SAMSON. It's potentially a bigger problem, correct.

Mr. LATOURETTE. Right.

Mr. SAMSON. There's also, one, that front movement of that flame is going to hit an ignition source and then rapidly burn back to the pool and turn back into the pool fire, where we were discussing a minute ago.

So, an LNG, when it is initially vaporized, is lighter than air, but unlike propane in your backyard grill, this product is lighter than air when it is warmer than -160 degrees, so then it rises and dissipates into the atmosphere. So, there is multiple issues that could happen with a vapor cloud, all of which are extremely unlikely in the event that it's going to generate the event.

So, a vapor cloud that comes from a collision-type leak, which has never occurred in the LNG industry, and it's not that LNG ships haven't had collisions, an LNG ship hit the Rock of Gibralter at maximum speed and didn't leak a drop of LNG, but a vapor cloud of the concern you are talking about would come from the same type of terrorist act that didn't create an ignition source.

And, if you, you know, the GAO report makes it clear that everybody in the scientific body agrees that this is an extremely unlikely and not the issue to be dealt with in potential LNG terrorist attacks.

Mr. LATOURETTE. I think the last question is that, if all the things are in place in terms of safety, security, the science and so forth and so on, that in your testimony, why are these folks still upset?

Mr. SAMSON. You know, we are a big power company, and we get crowds not this big, but we get crowds when we put up wind turbines, all right, big energy infrastructure projects, affecting land, affecting people's perceived rights, are always emotional issues.

LNG is new, all right, we import 60 percent of our oil, but until recently we haven't had to import natural gas. So, it's not well understood, and it's new, and in a post 9/11 world it's a very emotional issue.

That's why we have science, process and procedure.

Mr. LATOURETTE. Do you think from a company standpoint, if the Chairman will let me have this last question, from a company standpoint you've done everything you can to go into these communities and talk to them? I mean, I heard the guy from the county say that he's heard, you know, well, 2,000 people, 4,000, who cares, I mean, it's only 2,000. I mean, that hasn't been the attitude of your company, has it? And, have you done what you are supposed to be doing with these folks, to allay the concerns that you are talking about?

Mr. SAMSON. Absolutely. I think that we, you know, we have a mandatory pre-filing process at FERC, we were in the community six months before that process started. We met with every government official that this district is in before we started the process.

Did we have the unfortunate of deciding to proceed forward in an election year in Maryland that affected some of this? Sure we did, but the need is here, and these things take a long time to bring on line.

There may be 12 of them approved and heading into construction, none of them are serving market areas. There's a difference between building an LNG terminal in the Gulf of Mexico and building thousands of miles of pipeline, than bringing it to the area it's going to be used in.

Mr. LATOURETTE. Thank you, Mr. Chairman.

Mr. CUMMINGS. Mr. Ruppersberger.

Mr. RUPPERSBERGER. Sure, thank you.

Well, first, let me address the issue on the response to the communities. Those of us up here, I think, have been in politics for over 20 years, and there are a lot of groups that do not like change, I agree with you.

When this first came to the table, the community came to me and said, we demand you be against this. And, I said, I'm not going to take a position until I do my own research. I went to Congressional Research that we have available to us in Congress, and asked them about the issue of safety, and they felt that in the end that a facility such as this should not be near residential areas, it should be in more remote places. At that point, I decided that I was going to be, you know, against this facility.

And, I do want to respond to the issue of this community, and Sharon Beazley is here with Dunbar Brooks, who I've worked with for over 20 years on education issues and everything else, and this community, when they came to me, I said to them, you are not going to win this issue on a emotion, and how many people are there, or how many signs, or whatever, you are going to win it based on the facts and you've got to get your arguments together.

And, if you can hear what the testimony they gave today, they got out and they got people together, they had people assigned to different committees, and they got their facts, and I think those facts were well presented, and it's helped me and other people move forward in this process.

And so, I want to make sure that the record is clear, we use it sometimes in politics, sometimes people become CAVEs, citizens against virtually everything, this is not this group. They've done their homework, they are not emotional, and they are factually correct.

Now, let me get into some of the issues, Mr. Samson. How long, how many LNG facilities do you operate in the world, not in the United States, I heard one, is it?

Mr. SAMSON. One.

Mr. RUPPERSBERGER. One, now how long have you operated that facility?

Mr. SAMSON. Since 2003.

Mr. RUPPERSBERGER. All right, do you have any safety record one way or another? Are there regulatory groups in the Dominican Republic who oversee you?

Mr. SAMSON. There's no incidents at the facility.

Mr. RUPPERSBERGER. Are there any—do they have a regulatory operation in Dominican Republic that deals with your LNG facility?

Mr. SAMSON. They have an environmental regulatory agency, plus they have their public works agencies that regulate both propane in the country and the LNG.

Mr. RUPPERSBERGER. How many jobs do you generate for Dominican Republic in this facility?

Mr. SAMSON. In this facility? I would say, it's a facility that's colocated with a combined cycle power plant, so the number is probably around 35 or 40.

Mr. RUPPERSBERGER. It's fair to say, basically, you don't have a lot of experience, one facility since 2003, in managing LNG facilities.

Mr. SAMSON. I would think compared to most companies in the world, including energy companies, we have more experience. Shell is the biggest exporter of LNG in the world, and they are starting up their first import terminal.

Mr. RUPPERSBERGER. Where are you going to get your natural gas from, what parts of the world?

Mr. SAMSON. It's undetermined. We'll probably contract with a number of oil majors that will bring it in from a number of different sources.

Mr. RUPPERSBERGER. Could it be areas in the Middle East?

Mr. SAMSON. The Middle East as in?

Mr. RUPPERSBERGER. I'm just saying, generally, the area. I'm going to ask you Africa. I'm going to ask you other spots in the world.

Mr. SAMSON. Well, it could come from, it could come from Africa, it could come from Egypt, it could come from Trinidad. Trinidad is the largest supplier of LNG in the United States today. It could come from Qatar.

Mr. RUPPERSBERGER. Qatar is very large. Okay.

Does your company own or operate any tankers that will be transporting LNG gas to the United States?

Mr. SAMSON. No.

Mr. RUPPERSBERGER. Okay. Do you know, will your tankers make one stop, will they stop in other areas on their way to the United States?

Mr. SAMSON. Typically, not. LNG tankers, unlike a lot of tankers, do not operate in partial cargo mode. So, they fill up and they empty.

Mr. RUPPERSBERGER. Now, do you know what the security is at the port of embarkation, where this gas is coming from?

Mr. SAMSON. I know that part of the Coast Guard's process is to visit and vet the various exporting countries that bring LNG to the United States.

Mr. RUPPERSBERGER. And, do you know if there are any background checks that are being done, or that you will do as it relates to the people on the ship? Mr. Latourette raised the issue where his concerns were, and do you know if there's any background checks on the people that are on those ships, or do you know what the security is on those ships?

Mr. SAMSON. I will primarily defer to what the Coast Guard's process is, which is to, as part of their arrival notice is to have, not only notices of arrival of a ship, but it's list of its crew members.

Mr. RUPPERSBERGER. Well, that's manifest, but let me say this to you. The Coast Guard has so much responsibility, I mean, there seems to be that if you are going to be in the business you better have security at the port of embarkation, based on the issues of threats that have been talked about here today.

Mr. SAMSON. Well, I—Congressman, with all due respect, I thought the Coast Guard vetting these would be more appropriate than me. It's not that the company wouldn't vet, or know the companies, and the security policies, and the procedures they employ in order to bring LNG to this facility.

Any agreement we have drafted or entered into with these companies has the same type of requirements that the Coast Guard would require, as far as crew vetting and those kind of things.

Mr. RUPPERSBERGER. Well, what I'm getting at——

Mr. SAMSON. Actually——

Mr. RUPPERSBERGER. I'm sorry, I want you to finish.

Mr. SAMSON. I know I actually thought that it would be more comforting that the Coast Guard vets these crews than a private entity.

Mr. RUPPERSBERGER. But, I want to get back to your point that you've been in business since 2003, this is really your first operation other than that, this is big business. There's a lot of money to be made, but part of that business is security. That's why Dubai did so well, and yet, we worked very closely with the Port of Dubai, and yet we don't have the ability to control their people, and who are on their ships, and do the background like we do in the United States.

Let me get to Richard Clarke, because that's been raised here today. You know, I know the industry, and AES specifically, have engaged Mr. Clarke to tell us that LNG plants, even the one proposed, are safe. Now, is Mr. Clarke paid by you or the LNG industry in general? Do you know that?

Mr. SAMSON. I don't think anybody else in the LNG industry has engaged Richard Clarke. When we engaged him, his comment to us was, you don't seem to understand, I'm the guy that puts a bullet in these projects. We engaged him anyhow.

As I testified earlier today, AES has a siting policy that says we won't put one of these facilities less than a mile from populations, and that is different than the facilities operating and proposed in the State of Massachusetts, and proposed in Rhode Island, where Mr. Clarke's testimony was against those projects.

Mr. RUPPERSBERGER. Do you know if Mr. Clarke visited this area, this site, and the surrounding communities, when he came to his conclusion?

Mr. SAMSON. I know that Mr. Clarke flew this site, in a helicopter.

Mr. RUPPERSBERGER. Do you know if he traveled, did he travel the path that the tankers would take up the Chesapeake Bay?

Mr. SAMSON. I know they reviewed the path of the tanker up the Chesapeake Bay, and the draft WSA was provided to his firm in order to do that.

Mr. RUPPERSBERGER. Do you know if Mr. Clarke's or your company received daily intelligence reports, so that you have the absolute most up-to-date security assessment of the region?

Mr. SAMSON. I know that Mr. Clarke maintains his security clearance, what his ability or contacts with the intelligence community, I cannot testify to that.

Mr. RUPPERSBERGER. Do you know if Mr. Clarke evaluated the traffic that travels the Chesapeake Bay on a summer weekend, because it seemed to me that that wasn't addressed in his report, and it seemed, if you've heard the testimony today, it's a very relevant security factor.

Mr. SAMSON. Well, I think it was addressed in his report.

Mr. RUPPERSBERGER. What did it say?

Mr. SAMSON. That as far as the impacts on traffic?

Mr. RUPPERSBERGER. As far as tankers, not just terrorists, but safety issues also, about tankers coming under—that have to come under the Chesapeake Bay.

Mr. SAMSON. Well, Mr. Clarke was engaged to analyze potential terrorist threat to an LNG ship transiting to or being docked at the Sparrows Point facility.

Mr. RUPPERSBERGER. Do you know if in the report that he addressed the issue of coming from the Atlantic Ocean, up the Chesapeake Bay, past the different urban areas, into Dundalk, do you know if he took that route and evaluated the whole route when he was coming up the Chesapeake Bay?

Mr. SAMSON. Yes, he did evaluate the whole route, and it's important to note that nowhere in that route does an LNG ship come within a mile of populations.

Mr. RUPPERSBERGER. And, you think there's a big difference between a mile and a mile and a half or two miles?

Mr. SAMSON. I think that when the vast majority of the scientists engaged in this field agree that a mile is the outer limit of the potential heat impact to populations, it's an appropriate standard.

Mr. RUPPERSBERGER. You know, you are getting ready to try to build this facility, and we hope we can stop it in this site. We understand the issue of energy policy, and those type of situations. Do you have a safety plan or standards in place on what you are going to do if you get the permission to build this, on how you are going to protect your own facility and the community surrounding it?

Mr. SAMSON. The safety plan is a number of things, and it will constantly be an evolving and living document. AES has a tremendous safety record. We may only operate one LNG facility, but we operate $30 billion of power plant assets, which involve significantly higher risk to our employees around the world.

So, safety is an ongoing issue. There will be an emergency response plan, as far as this project. There will be safety procedures on site. There will be firefighter training. There will be firefighter training provided on LNG-specific fires for the county responders and our employees. All of those things are part of the process.

Mr. RUPPERSBERGER. Let me ask you this question. Assuming that you have built this after five years, what do you anticipate your profit will be, after five years, profit to your company?

Mr. SAMSON. I can't tell you that.

Mr. RUPPERSBERGER. Well, you've got some projections or you wouldn't be in business. What do you feel your profits would be after one year, five years, ten years? You are in this business, you want to build a plant here, what will your profits be?

Mr. SAMSON. It's——

Mr. RUPPERSBERGER. I mean, you are talking about capacity, you have to put a plan together for that, you are talking about building cement tanks, what will your profits be once you've built this facility? Probably enormous.

Mr. SAMSON. —well, you are confusing AES with an oil and gas meter.

Mr. RUPPERSBERGER. Well, I'm just asking you, because what I'm getting back to is the issue of, number one, what's going to be put back into the community that won't even take advantage of this, what are your profits, or do you not want to answer that question?

Mr. SAMSON. I can't give you a reasonable forecast on what our profits will be.

Mr. RUPPERSBERGER. Is it because you just don't want to tell us in this hearing, or you just don't know?

Mr. SAMSON. I just don't know.

Mr. RUPPERSBERGER. Then, you are in this business, what would you anticipate? What would you guess that your profits would be?

Mr. SAMSON. I would guess that our profits would be north of 11 or 12 percent return on investment, or we wouldn't make the investment.

Mr. RUPPERSBERGER. Okay, so how much money would that be then?

Mr. SAMSON. All tolled, this investment is going to be in the——

Mr. RUPPERSBERGER. In the billions of dollars, your profit?

Mr. SAMSON. —close, $800 million.

Mr. RUPPERSBERGER. And, do you have any plan to put that back into the community, the region where you are building this?

Mr. SAMSON. Well, I think if you understood AES, you'll understand that we have a great reputation environmentally, a great community record. If you go to Cumberland County and ask them what they think of AES, they'll say they put a million dollars into our Board of Education alone, they put money into the YMCA every year. We are a great corporate citizen, and we've demonstrated that here in Maryland, and we'll do it again.

Mr. RUPPERSBERGER. You could be all right on that, it just seems to me based on the information we have before us, you just picked the wrong location.

Thank you.

Mr. CUMMINGS. As we get ready to close out, just one question, Mr. Samson.

How did environmental justice considerations factor into the choice of this site?

Mr. SAMSON. Well, it's an interesting issue, environmental justice, which is really routed in environmental impact, and those potential issues as it applies to siting of facilities, and clearly we will burn a little bit of our imported natural gas. But, the environmental issues associated with this project aren't significant, and that's not to say that we've ignored the fact that Turner Station is our closest community. We've been there more than we've been anywhere else. I've had, you know, numerous discussions with Dunbar Brooks, and Alison Mason, and the folks in Turner Station, and we, you know, are at a point of disagreement.

And, hopefully, we can get to the point where we are beyond that and can find good things to do in that community. But, when you go back to our siting premise, and it's not the remote criteria for the facility established by FERC, but it's, if we are outside of a mile, and the scientists of the Nation say that is the outer limit of safety, then we may still have a disagreement with Turner Station, but we don't think we've impacted that community in a negative manner more than any other community adjacent to the facility.

Mr. CUMMINGS. And, what alternative sites did you evaluate? I mean, were there other sites that you evaluated, when looking, comparing it to this one, or contrasting it?

Mr. SAMSON. Yes, and there's an exhaustive section in the FERC filing that deals with, not only specific sites, but process theories, could we do an off-shore or not do an off-shore facility to supply this market. Other sites up and down the Chesapeake were analyzed.

Mr. CUMMINGS. Last, but not least, in answer to Mr. Ruppersberger's questions, you were talking about what they would say in Cumberland, you know, about putting the million dollars into the school system, I think that's what you said. One of the things that I think that you will find is that there are a lot of people who live in these communities, while, you know, they'd like to see good corporate citizenship, they want to make sure that their children are able to grow up. I mean, these are real things, these are real concerns for them, and I think you—I hope that you don't under-estimate that.

I mean, I heard you say that you met with folks and whatever, but these, I mean, for groups to be able to do what they've been able to do to come together, to spend all this time today, and hours, upon hours, upon hours, of research and whatever to get people, I mean, people are busy these days, and then for them to take time out of their schedules to do this, and stay on top of it, is phenomenal.

And, I just hope that you understand that, and I hope that you also understand that what our hope is, is to make sure that FERC and the Coast Guard provide strict accountability, we are going to hold them to a standard of very strict accountability, and that they are supposed to do everything they are supposed to do, and if they are going outside of those boundaries, which I'm sure they won't, but if they do, we are going to be there.

And, the other thing that we are concerned about is just making sure that the Coast Guard has the capacity to do what they say they can do.

Finally, I ask unanimous consent that all Members have five days in which to revise and extend their remarks. Without objection, so ordered.

Ladies and gentlemen, thank you very much.

[Whereupon, at 2:15 p.m., the Subcommittee was adjourned.]

Senator Barbara A. Mikulski
Testimony before the House of Representatives
Subcommittee on Coast Guard and Maritime Transportation
April 23, 2007

Thank you Chairman Cummings and Ranking Member LaTourette for your leadership in holding this hearing today on the Coast Guard and LNG facilities. Mr. Chairman, let me be clear – I am absolutely opposed to a new LNG facility at Sparrows Point.

We must do all we can do to protect the Port of Baltimore and the people of the Baltimore metropolitan area. I oppose this because of my fears and my frustrations. I worry about a terrorist attack. I worry about an accident with ghoulish consequences. This is a national security issue and a community security issue, not just an energy or a budget issue.

I'm on the Intelligence Committee. I know that the threats to our country are real. I know terrorists are plotting to kill us every day. I'm on the Homeland Security Appropriations Subcommittee. I know that our ports and vital infrastructure are high-risk targets. These are targets of choice; we do not want them to be targets of opportunity. That's why I worry about an LNG facility in a densely populated area near one of the busiest ports in the nation. With LNG laden tankers passing by a nuclear power plant and under the Bay Bridge?

My concerns about grim and ghoulish consequences are not mine alone. Mr. Chairman, I bring to the Committee's attention a GAO [Government Accountability Office] Report: *Maritime Security – Public Consequences of a Terrorist Attack on a Tanker Carrying Natural Gas Need Clarification.* Scientists and engineers have raised enormous concerns about potential hazards of an accident or an attack on an LNG facility. And what do they tell us? Let's look at page 5: "Individuals who come into contact with LNG could experience freeze burns… as the liquid warms and changes into natural gas, it forms a visible, fog like vapor cloud." Can you imagine a vapor cloud coming from Sparrows Point? "Under certain atmospheric conditions, this cloud could drift into populated areas." What would be the effect? Not just a bad smell. "Because an LNG vapor cloud displaces the oxygen in the air, it could potentially asphyxiate people who come into contact with it." Hello! Is this what we want in Dundalk? In Turner Station?

We're talking about burns, vapor clouds and asphyxiation. We're talking about injury and possible death. The GAO said that we simply don't know what the impact could be of a serious LNG accident on public safety. How can anyone make a decision on LNG without knowing the impact on public safety?

Mr. Chairman, I am really hot about this and I am not new to this issue. I have been working on the safety of LNG facilities since 2001, when I first learned of plans to reopen the LNG terminal at Cove Point. It was just one month after 9/11 – October 11, 2002.

Let me tell you where Cove Point is – it is on the Bay in Calvert County, 3.5 miles from the Calvert Cliffs nuclear plant. Let me read from my letter to Patrick Wood, Chairman of FERC [Federal Energy Regulatory Commission]: "Dear Mr. Wood, What were you thinking when you granted preliminary approval to reopen the natural gas unloading plant at Cove Point, Maryland?

I cannot believe you would give this approval on the one month anniversary of the terrorist attacks on America, while President Bush was announcing that our country was at war."

Today, I am here to tell you about the safety and security lessons learned from Cove Point and why these issues need to be examined more closely before new LNG terminals are approved in populated areas like the Port of Baltimore. We still don't have the answers we need on Cove Point. Maybe today we can get some real answers.

First, I want to remind you about the LNG facility at Cove Point. In the aftermath of 9/11, as America fought the war on terrorism, we could not do business as usual. Yet, FERC was preparing to rubberstamp its approval for a LNG facility – highly flammable liquefied natural gas transported on foreign ships – 3.5 miles from a nuclear power plant.

I did five things to ensure that the safety and security of this plan was fully examined:

1. I demanded FERC review its decision in the interest of national security.

2. I got DHS [Department of Homeland Security] and FBI involved in the review process, asking them to fully consider potential terrorism risks.

3. I asked the Nuclear Regulatory Commission to look at the potential threat to Calvert Cliffs and the people of Maryland.

4. I urged the Coast Guard to rigorously review the proposal.

5. I pushed the Coast Guard to review how they will keep Cove Point secure. Believe it or not, it was the very first of its kind for a LNG terminal. In their report, the Coast Guard assured me they had sufficient resources to control and secure LNG tanker shipping. The Coast Guard promised to provide waterside security during gas transfer, scrutinize crew lists, board and inspect tankers, escort the tankers up the Bay, and enforce exclusion zones.

The Coast Guard stood up and took the lead, and they have done their job effectively. But guess what? They are overstretched. Now the Coast Guard is turning over some of its security responsibilities to Dominion Power. The Coast Guard has bailed out. Now security for Cove Point is shared between the Coast Guard, Dominion Power and local law enforcement. So the safety and security of the people of Calvert County and all who live or work on the Bay is provided by an uncertain mix of private security guards, local law enforcement and the overstretched Coast Guard. What will this mean? I've tried to find out – all I get is platitudes and abstractions – and a lot of paper. If there is a problem, do you call the Sheriff of Calvert County? Do you call the rent-a-cops from a private security firm? We must have these answers!

Now a second LNG terminal is proposed at Sparrows Point. This site only amplifies my safety and security concerns. Sparrows Point is more than 50 miles further up the Chesapeake Bay. LNG tankers would have to travel through the narrowest portions of the Bay, under the Bay Bridge, through heavily used commercial fishing and recreational boating areas, to the mouth of the Port of Baltimore – our state's economic engine. The Port supports 42,000 maritime related jobs, generating nearly $6 billion a year in salaries and revenues. This is a densely populated area – the site is less than two miles away from residential communities that are home to more than 65,000 residents. I know Governor Martin O'Malley and Baltimore County Executive Jim Smith will go into that with more detail next.

So here we are again, six years after the attacks of 9/11, questioning why a federal agency is willing to rubber stamp plans for an LNG facility. This time, I'm here with my partners at the state and local level, Governor O'Malley and County Executive Smith.

Today, there is even more evidence that approving a new LNG plant is unsafe and unwise. A recent GAO report found that more research is needed on the public safety impact of LNG spills.

In this post-9/11 era, the Coast Guard is overburdened and stretched thin, straining to protect our coastlines and waterways. How can they assure the safety of yet another LNG facility? I have too many unanswered questions.

I am committed to promoting America's energy independence. However, it must be home grown and not compromise our national security. I want to make sure every single agency with authority over LNG plants and shipping has looked at the risk of a terrorist attack. What would be the consequences? What can and should be done to review and control the plants, the docks, the ships, the crews and the neighboring communities?

I don't want permits issued and foreign-flag tankers coming to our ports until we know the answer to these questions from the Coast Guard, DHS, FBI and FERC. It is my responsibility as a United States Senator to ensure the right people are asking the right questions to protect the American people from terrorism. I thank the Chairman for this opportunity to testify, and look forward to joining you for questioning in the next panel.

TESTIMONY OF DUNBAR BROOKS
Chairman, Turner Station Development Corporation
Monday, April 23, 2007
Before
The House Subcommittee on Coast Guard and Maritime Transportation
Regarding
Safety and Security of Liquefied Natural Gas and the Impact on Port Operations

Mr. Chairman and members of the subcommittee I thank you for allowing me to testify on behalf of residents of Turner Station, Maryland regarding the safety and security issues surrounding the proposed AES Sparrows Point, Maryland liquefied natural facility and its ancillary plants that will sit 1.1 miles from our residential community. As the community that is closest to the proposed LNG facility and LNG tanker ships as they dock, we would be the first Baltimore County residents impacted by a catastrophic event occurring at the LNG storage facility or the LNG tanker. The highest probability for injury would occur first and foremost in our neighborhood.

Because of our close proximity to the facility and the fact that this community of 3,000 people has limited egress for evacuation in the event of an LNG catastrophe necessitates that our community stridently demand quickly implemented and effective safety measures be developed by the LNG facility operators, federal, state, and local first responders and the United States Coast Guard who will accompany these LNG tankers through the Chesapeake Bay and the Brewington Channel. Turner Station residents have never been presented by the AES Corporation or any other entity a plan that addresses our notification and/or evacuation of our residents in the event of an accident or deliberate terrorist attack on the LNG facility or its tankers. It was suggested by AES that a "horn" could sounded at the LNG facility that would somehow warn our residents more than one mile away. Those first responders for the State of Maryland and Baltimore County have stated for the record that they lack the resources and are incapable of dealing with an LNG tanker breach with a vapor cloud and the resulting fire.

We ask that you incorporate by reference the comments and responses of the state and Baltimore County officials contained in the *State of Maryland Advisory Report: A Response to the Proposed AES Sparrows Point LNG Project*, dated 7 February 2007 and submitted by Maryland Governor Martin O'Malley. We further request that you append to our testimony those comments made by on behalf of the Governor of the State of Maryland and the Baltimore County Executive, Jim Smith, at today's hearing.

The Turner Station community is adamantly opposed to siting of this facility so near to our neighborhood. We have been informed that the transit of these large LNG tankers into the Baltimore Harbor area will add considerable responsibility the U.S. Coast Guard mission and will severely strain their currently diminished resources. It will necessitate the acquisition of new and larger tugboats and additional combat ready personnel to protect these LNG tankers and the channel. The impact of bringing these LNG tankers into the Brewington Channel/Bear Creek and honoring the exclusion zones that must surround these ships will suspend commercial and recreational boating in the waters just of our shore for extended periods of time. The practical effect of permitting this AES Sparrows Point facility to operate means that there will 130 supertankers per year traversing the Chesapeake Bay and the mouth of the Baltimore Harbor. This means that on any given day there will be a supertanker either traveling up the Chesapeake Bay or traveling down the Chesapeake Bay or will be docking or docked in the Brewington Channel. This means that the Coast Guard and other Department of Homeland Security personnel must be present on a 24/7 basis every day of the year in order to marginally protect just these LNG vessels.

Our community demands that a highly effective safety and evacuation plan be developed and implemented because the LNG facility and LNG tankers are terrorist targets. For that reason alone the project should be prohibited. AES officials told our residents in a 2006 public meeting that we should not be concerned about the danger of terrorist attack because "...there aren't that many you". This statement was reiterated by Richard A. Clarke, an AES consultant, in a February 1, 2007 *Baltimore Sun* article in which he stated that "...an operation in Sparrows Point would be 'safe'...terrorists want to kill people. They want to kill hundreds of people". We are left as a community quite confounded by Mr. Clarke's statement because in the May 2005 report entitled LNG Facilities in Urban Areas, prepared by Good Harbor Consulting, LLC for the Attorney General of Rhode Island , Mr. Clarke, the principal investigator, wrote:

> 3. INTENT: The Jihadist Terrorist network of al Qaeda and similar groups have articulated goals including a) killing large number of Americans, b) conducting attacks in the US, c) damaging the US economy and infrastructure, and d) damaging oil and gas infrastructure.
>
> The al Qaeda network has demonstrated the use of parts of the US civilian infrastructure as weapons to be used against US facilities.
>
> As to the intent to attack shipping, the al Qaeda network has used explosive laden small craft to attack a US destroyer in port and a double hull laden French tanker at sea. They have planned or discussed attacks on shipping in other locations around the world. The FBI has warned that the al Qaeda network is interested in scuba gear for underwater attacks in the US.
>
> Other terrorist groups, specifically homegrown American groups, have also planned to destroy infrastructure in this country, such as the attack in Oklahoma in 1995 and the attempted attack on a gas storage facility in California in 1998. ---------------------- page 4
>
> ....As to the LNG ship, the creation of restricted waterways around the LNG tanker and use of armed Coast Guard (USCG) patrol craft provides little assurance that a determined terrorist group would be stopped before attacking

> the tanker with an explosives laden vessel Narraganset Bay is home to thousands of small craft. The USCG and other law enforcement agencies would be reluctant to use lethal force against an apparently misguided pleasure craft. Moreover, the escorting patrol boats could themselves be attacked in a multi-boat operation. Counter SCUBA operations in the Bay would also not offer high assurance of success.
>
> Attacks involving stand off weapons could be mounted from boats or from numerous land locations along the route. To prevent the entry of weapons for land based, stand-off attacks, all vehicles entering the littoral would have to be searched not just during the tanker's transit, but at all times.
>
> As to the urban LNG facility, it currently appears to have inadequate security to prevent unauthorized penetration.
>
> We are unaware of any analysis performed by counter-terrorism experts in the US Government, such as the US Special Operation Command, that would demonstrate the ability of the Coast Guard and the Rhode Island police to prevent attacks by determined and skilled terrorists on either the urban off loading facility and/or the LNG tanker during the 29 mile inland waterway transit. .... Page 5

To our community, the text just cited sounds like a perfect description of the Chesapeake Bay and dangers we face. So what statement by Mr. Clarke are we to believe?

The Turner Station community is surrounded by industry. The northwest portion our community is less than 1,000 feet from the Dundalk Marine Terminal. The Carnegie Plats community which is adjacent to our community abuts the Dundalk Marine Terminal. Any threats to our communities also imperil port operations at the Dundalk Marine Terminal. Any cessation of boating traffic in the Chesapeake Bay and Baltimore Harbor will have a negative impact on marine terminal operations. Any LNG related catastrophic events that impact the residential communities of Turner Station, Carnegie Plats, and Watersedge also place in peril private and state workers located at the Dundalk Marine Terminal.

We request that this subcommittee highly scrutinize the authorization of LNG plant sitings and their impact in view of the February, 2007 GAO report entitled: *Public Safety Consequence of a Terrorist Attack on a Tanker Carrying Liquefied Natural Gas Need Clarification.* The report concludes that we cannot make wise LNG siting decisions with only results of existing research such as the Sandia National Laboratories studies. The GAO expert panel recommends that further research needs to be conducted to assess maximum distances for fires and asphyxiation associated with LNG tanker breaches over water and on land. In light of these reservations we suggest that all LNG facility proposed siting decisions be halted until our regulators and Congress have a better understanding of the consequences.

Our community has consistently raised our opposition to this proposed LNG facility to the Federal Energy Regulatory Commission. We have raised our concerns about the public safety threat that it poses even based on existing research. We have raised the concern that no viable evacuation or community notification plan has been offered .Our three communities (Turner Station, Carnegie Plats, and Watersedge) would in the event of a catastrophic event and evacuation all converge at a single exit point in order to leave our peninsula. The prospect of 5,000 people within a 2 mile radius of this facility all arriving a single community exit point is a recipe for disaster and demands adequate planning. Our community along with others has raised the myriad environmental problems that will emerge associated with the dredging of the Brewington Channel; from the destruction and disturbance of Chesapeake Bay aquatic life and the lack of a plan to dispose 4 million cubic yards of toxic dredge material.

I want to thank the subcommittee for allowing this testimony on behalf of Turner Station residents. We urge you to deliberate carefully and protect our port which is our livelihood and our lives. Thank you.

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MARINE ENGINEERS' BENEFICIAL ASSOCIATION

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
Subcommittee on Coast Guard and Maritime Transportation

HEARING ON SAFETY AND SECURITY OF LIQUEFIED NATURAL GAS AND THE IMPACT ON PORT OPERATIONS

APRIL 23, 2007

TESTIMONY OF WILLIAM DOYLE
Deputy General Counsel
MARINE ENGINEERS' BENEFICIAL ASSOCIATION

April 23, 2007

HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
Subcommittee on Coast Guard and Maritime Transportation

HEARING ON SAFETY AND SECURITY OF LIQUEFIED NATURAL GAS AND THE IMPACT ON PORT OPERATIONS

Thank you Chairman Cummings and Ranking Member LaTourette, and thank you to the rest of the Committee for inviting me to speak before you today. I would specifically like to thank you for allowing MEBA the opportunity to discuss the unique issues we face in safely and securely transporting Liquefied Natural Gas to the United States.

My name is William Doyle and I am the Deputy General Counsel of the Marine Engineers' Beneficial Association and a U.S. Coast Guard Licensed Officer in the Merchant Marine. The MEBA is the nation's oldest maritime labor union, representing deck and engineering officers licensed by the United States Coast Guard. Our Officers serve in a variety of capacities in the commercial, government owned and operated, and domestic fleets, as well as in shore side employment at various terminals.

The MEBA was proud to take a leading role in the development of the transportation of LNG by tank vessels in the 1970s. Our members crewed U.S. flag LNG vessels until 2001. Today, however, not a single LNG tanker flies the American flag, and none of these vessels are crewed by Americans. We feel that this represents a serious threat to America, and we have been working to restore American mariners aboard this important segment of the maritime community.

Recently, however, MEBA has entered into a landmark agreement with LNG transporter, Excelerate Energy. Pursuant to this agreement, MEBA will be integrating its U.S. Coast Guard deck and engineering officers into its entire LNG tanker fleet and at its terminals. MEBA commends Excelerate and its foreign partners, Exmar, NV and Skaugen Terminals for their cooperation. This is also a result of the tremendous importance that Congress and agencies such as the Maritime Administration have placed on the issue of safe and secure transportation of LNG to the United States.

Oversight of LNG Terminals and Ports—Deepwater vs. Land Based

The permitting of LNG import terminals generally fall into two categories, which are Deepwater Port and Land Based. With respect to oversight and permitting, primarily land based terminals are under the authority of the Federal Energy Regulatory Commission (FERC) who works in conjunction with the U.S. Coast Guard. Regarding Deepwater ports, they are under the authority of the Maritime Administration which also works in conjunction with the Coast Guard. The important distinction is that there is basically no oversight from a commercial shipping perspective over the permitting of land based LNG import terminals.

Briefly, the permitting of LNG Deepwater ports utilizes the U.S. Maritime Administration (MarAd) as the licensing agency. MarAd was granted this authority by Congress in 2002 through amending the Deepwater Port Act in the Maritime Transportation Security Act. In 2006, Congress again amended the Deepwater Port Act granting MarAd a larger role in the oversight of the commercial shipboard transportation of LNG. It first requires the Secretary of Transportation to develop and implement a program to promote the transportation of LNG to the United States on US-Flag registered vessels with U.S. citizen crews. That amendment further gives top priority to all applications for deepwater LNG import terminals that intend utilize US-Flag LNG vessels. Finally, it requires that all applications for deepwater LNG import terminals specify the flag of the vessels and the nationality of the officers and crew that will be used to import the gas into the United States.

Indeed, it is critical to the safe and secure transportation of LNG that American mariners crew these LNG vessels entering U.S. ports. There is a severe worldwide shortage of LNG officers. This shortage is only expected to get worse. In addition, the training standards and qualification process of the foreign officers delivering cargo to the United States has generated enormous concern among shipowners, operators, classification societies and training entities.

The oversight and permitting of land based LNG terminals has not kept pace with the safety and security aspects that have been recognized as important to Congress with respect to Deepwater ports. This should be changed for the reasons discussed below.

Need for Shipboard Import of LNG to the United States

According to the Federal Energy Regulatory Commission, U.S. natural gas demand is expected to increase by 40% by 2025 to 30.7 trillion cubic feet (TCF).[i] However, domestic supply, which has not equaled demand for many years, will only increase by 14.5 %. Without intervention, our natural gas supply will not keep pace with industry and the public's demand. Mr. Jeff Wright, Chief of the Energy Infrastructure Group, Office of Energy Project, Federal Energy Regulatory Commission cites the following reasons for this situation:

- Decline in the United States' underground domestic gas reserves[ii];
- Canada's problems with flattening gas production in the Western Canadian Sedimentary Basin (WSCB) and its need to fulfill its own demands;[iii] and
- Continuation of Mexico's growing economy with Mexico keeping an increasing share of its natural gas to meet its future demands.[iv]

This means the United States cannot rely solely on natural gas produced in North America. Therefore, LNG will need to be imported to the United States on oceangoing LNG tankships.

Need for U.S. Merchant Marine

The U.S. Merchant Marine should play an integral role in the importation of LNG in order to ensure the utmost in safety and security that all United States citizens deserve. American mariners, in particular members of the Marine Engineers' Beneficial Association, are highly skilled in the operation of steam plants used on the majority of LNG vessels and are experts with respect to operating other marine power systems such as diesel, diesel electric and gas turbine. U.S. Merchant Mariners are also subjected to rigorous background checks and competency requirements. In addition, the MEBA continues to train its members to the highest industry standards in LNG technologies.

Importantly, it is the policy of Congress that priority should go to using U.S. crews for staffing purposes on LNG tankers that deliver cargo to the United States. After all, major importing nations ensure the safe and secure importation of this vital energy source by utilizing citizen mariners from their respective nations -- the United States should do so as well.

In contrast, reliable crewing in the international LNG transportation market is reportedly in a tail-spin. It has been widely reported that international LNG ship operators are "poaching" qualified shipboard officers from each other through economic enticements. Constant crew changeover, poorly trained crewmembers and questionably qualified mariners undermine the efforts of a historically safety conscious LNG sector and pose an imminent threat to the safety and security of citizens located near or en route to LNG receiving facilities.

Transportation of LNG worldwide is a rapidly expanding marine service. This growth has never happened so quickly before, or in a segment of the maritime industry that is technically so different from other segments. The shipboard transportation of LNG has a great safety record. This is due in large part because it took approximately 40 years to for the international LNG fleet to reach 200 vessels. It may only take 5 more years for the LNG fleet to increase by 100 or more LNG tankers. Thus proper vetting and training are critical factors for consideration.

Thorough Vetting of U.S. Merchant Mariners Provides Unmatched Shipboard and Port Security

All LNG entering the U.S. is carried on foreign flag ships operated by either non-U.S. citizen mariners, or aliens who are not lawfully admitted to the United States for permanent residence. Unlike foreign seamen:

- U.S. Merchant Mariners receive their credentials to work from the U.S. Coast Guard;

- U.S. Merchant Mariners undergo extensive background checks performed by the Federal Bureau of Investigation;
- U.S. Merchant Mariners are background checked through a National Driver (vehicle) Record database;
- U.S. Merchant Mariners will also be subject to jurisdiction of the Transportation Safety Administration (TSA) where they will be vetted through a terrorist watch database in order to receive a Transportation Worker Identification Card (TWIC).
- U.S. Merchant Mariners are citizens of the United States or aliens lawfully admitted for permanent residence.

American mariners undergo a stringent and thorough vetting and credentialing process. Our Coast Guard-issued license is considered accurate (with regard to identity of the holder) and valid with respect to the qualifications and ability of the individual mariner. Moreover, the document is relatively tamper-proof. Each mariner goes through an extensive background check by several federal agencies including the Coast Guard, Federal Bureau of Investigation and now with the TWIC coming into effect, the Transportation Security Administration.

While foreign mariners may be required to comply with their government's regulations as well as international standards, the validity of some of the credentials is suspect. A few years ago, International Transport Workers Federation President, David Cockroft, purchased an authentic Panamanian first officers certificate and sea book despite no practical maritime experience. The Seafarers' International Research Centre at the University of Wales investigated the issue of fraudulent qualifications. Its preliminary findings revealed 12, 653 cases of forgery in 2001

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Federal and state government, local municipalities and the communities surrounding LNG import terminals can be assured, that with American mariners, the LNG vessels are manned by professional seafarers who have the integrity and the training necessary for the safe transport of LNG.

Problems in Growth of Demand for LNG and with Incoming Generation of LNG Officers

On June 20, 2006, Reuters reported that a growing global demand for liquefied natural gas and tight supply of specialized tankers and crew create a risk of dangerous lapses in standards of security. See, Darwin (Reuters), *LNG Demand Growth Risks Fall in Shipping Standards, June 20, 2006.*

Setting aside the security issue of foreign mariners, the United States must take into consideration the risks involved with poorly trained, insufficiently qualified and questionably vetted mariners who may deliver LNG to its shores. For instance, Yea Byeon-Deok, professor and LNG initiative coordinator of the International Association of Maritime Universities, recently stated at a conference in Australia: "Nobody knows what would happen if a significant accident occurred on a large LNG carrier. All we can say is that a 100,000 ton tanker has four times the energy potential of the atomic bomb used to hit Hiroshima. . . Many sub-standard vessels have begun to appear as demand for LNG increases, while there is a chronic shortage of experienced crew."

New orders for construction of LNG vessels imply a need for 3,575 officers over the next three years, Professor Yea said, of which 60% would need to be at senior or experienced level. Yea warned that "recruitment and training were falling ***dangerously short of requirements to staff complicated vessels which could make dramatic targets for potential terror attacks***." Reuters, *June 20, 2006*. Mr. Yea pointed out that the growth in "flag of convenience" ships which fly alternative flags to the country of ownership, allow the owners to avoid taxes, quality control and labor regulations which evidences deteriorating standards.

The younger generation of sea-going deck and engineering officers is withdrawing from the industry prematurely. These junior officers are showing less and less interest in continuing to go to sea and they are typically leaving for shore-side positions prior to taking on senior level seagoing positions. This has made it difficult for ship owners and operators to ensure a sustained supply of senior officers. There is as of yet no effective means to counter this tendency. This data is based on a report in the U.S. Coast Guard *Journal of Safety at Sea, Proceedings* regarding the international (non-U.S. Merchant Mariner) pool of shipboard officers.

The U.S. Merchant Marine was not considered in the aforementioned report. Indeed, had the U.S. Merchant Marine been considered, the resulting report would have shown that there is a vibrant and growing U.S. Merchant Mariner pool resulting in part by investments made in the passenger, freighter and tanker vessel maritime sectors. Moreover, it makes sense to staff LNG vessels delivering cargo to the United States with U.S. merchant mariners. U.S. merchant mariners are true patriots and care about their country-- they would not be "for hire" foreign personnel with little or no connection to America other than a job that provides a paycheck. U.S. Coast Guard licensed officers and crew provide answers and solutions to many of the safety and security concerns surrounding the importation of LNG.

Wide Scale Officer Shortage is Resulting in Foreign Ship Operators "Poaching" LNG Officers; Poor Training; Steep Decline in Safety and Security; and Violations of International Law

As reported in numerous articles and studies conducted by leading international maritime trade publications including Tradewinds and Fairplay, LNG owners and operators are lashing out at each other with allegations of "poaching", conducting insufficient training in violation of ISM Code as well as failing to properly check past employment references.

The sudden and sustained surge in global demand for liquefied natural gas and the worldwide shortage of mariners with LNG and steam experience is leading to predictable results. Ship managers seem willing to do whatever they can to get their ships fully crewed in the face of a growing wide-scale officer shortage. "The industry had previously grown slowly, so companies were able to train manpower and expand operations at a comfortable rate of two to three ships every two years," Keith Bainbridge, director of LNG Shipping Solutions, told Fairplay magazine in 2005 "But where an industry experiences 40-50% growth within a couple of years, it will split at the seems," he predicts.[v]

This manpower crisis is made even worse by new ship managers entering the LNG trade. A Fairplay article titled, *Poaching War for Crew Erupts*, cited the "voracious appetite for scarce manning resources, both at sea and onshore. This has created severe competition among LNG owners."[vi]

The Society of International Gas Tanker and Terminal Operators LTD (SIGTTO) has recognized the acute shortage and the reaction by some. "A short-term answer for an LNG vessel operator is to "poach" crew from another such operator but, clearly, the long-term answer is training, training, and further training. SIGTTO members, as much as anyone, wish for the quite unique safety record of LNG shipping to be preserved. The influx of new personnel into the industry is of concern, especially if there is a temptation by a minority of operators to "cut corners" and put officers into positions of responsibility on a LNG carrier before they have been properly trained." [vii]

In an article titled *Officer Crunch Sparks Safety Alarm*, Anglo Eastern Ship Management's training director Pradeep Chawla states that "intense pressure to promote more maritime officers is resulting in inexperienced officers making more mistakes and more dangerous situations on board. The training director noted that, "shortages have made it harder to retain officers because manning agents use higher wages to lure away experienced seafarers, especially in LNG/LPG and other specialized trades."[viii] Moreover, not all companies train officers, with many resorting to poaching.

The crewing crunch is giving rise to new and dangerous theories of crewing to meet the sustained demand. "Some operators are contemplating an airline-style approach, training their crew units to ever-higher standards and frequently rotating them among vessels. That would fly in the face of an industry that had, until last year, been characterized by its conservatism on crewing and had viewed rapid crew rotation as a threat to safety." The article mentions that with the shortage, there is an "increasing incidence of crews of strangers being cobbled together with precious little time to develop mutual trust and overcome their natural fear of blame."

In an article titled *Near Calamities in Cargo Operations*, Fairplay details two case studies, on international vessel crewing practices, to illustrate the dangers of new crew members who are unfamiliar with the vessel or on-board procedures. "In both incidents, one of the factors that contributed to the near calamities was the fact that one or more of the crewmembers involved were new to the ship and unfamiliar with all aspects of the vessel." "The importance of learning the idiosyncrasies of a particular vessel cannot be overstressed, and even when crew are transferred to sister ships they should not assume that every feature of the ships will be the same." As noted above, short cuts in manning and "inventive" solutions to crew shortages can prove to be a recipe for disaster.[ix]

The consequences of crewing instability and poaching can also lead to serious deterioration of the relationship between mariner and management. "There has to be a management team in which officers can pick up the phone and discuss problems openly, rather than hiding them until it is too late" says Simon Pressly, GM of Dorchester Marine, an LNG vessel operator in a Fairplay article. The author continues with the observation that, "Unfortunately, with poaching so rampant, the dangerous lack of crew continuity is likely to continue until operators start making the requisite investments in manpower training."[x]

Tradewinds states that the LNG-crewing shortage is giving rise to some serious shortcomings that are a direct threat to the industry's safety record and are in violation of the International Safety Management (ISM) Code. Some operators and ship managers are employing senior-level ship's officers that were terminated from employment by competing companies due to poor performance and substance abuse[xi].

On another front, big international shipping companies and ship management firms are feeling the LNG crewing pinch. Some operators are enticing LNG shipboard officers to switch companies by offering wages at 30%-40% higher than what has been paid in the past—and officers are switching companies and leaving their former employer in crisis. Some companies are offering over $18,000 a month (in wages only, not including benefits) to attract qualified LNG officers[xii].

All decision makers and stakeholders involved with the importation of LNG to the United States must take notice of what is going on in the international market. With growing natural gas demands and some 50-plus applications on the books for LNG import terminals, the American people need to be assured that the most highly trained and experienced personnel are transporting security sensitive LNG to the United States. There is no room for error when it comes to liquefied natural gas. Like no other time in history, the economics are in place whereby the U.S. Merchant Marine can economically and safely deliver LNG cargo; provide a stable pool of mariners for the long term; provide the highest amount of training; and comply with all U.S. and international laws.

International Consequence: Insurance Underwriters Deeply Concerned with Inexperienced Crews Aboard LNG Vessels

A recent article titled *LNG Ships Facing Premium Boost* details the nervousness of the insurance industry as the LNG fleet suffers through poorly managed growing pains. "Underwriters appear to be changing their view of LNG vessels, which have traditionally been regarded as particularly well managed, despite being costly and potentially hazardous." Now, higher insurance premiums are the prospect for LNG vessel owners as a result of "a big deterioration in the claims record of the world gas fleet." Marsh, the largest insurance brokering group issued a report concerning claims of more than $400 million run up by the LNG fleet.[xiii]

Higher insurance premiums are in prospect for owners of LNG carriers after a spate of claims including operational incidents have left insurance underwriters facing big losses according to Marsh.[xiv] Marsh reports that risk profile is increasing due to a shortage of crew with LNG experience.[xv]

With 200 LNG vessels in service and over 100 on order, Marsh identifies a number of factors associated with the rapid growth as adding to the risk profile of the gas-ship fleet including shortage of crews with LNG-carrier experience and new owners entering the market with the intention of trading vessels on the spot market rather than traditional long term charters.[xvi]

The shortage of mariners in the international fleet is dire. It is abundantly clear, therefore, that the U.S. Merchant Marine must enter the market.

International Reaction: Responsible Shipping Ministries React to Manning Shortcuts and Abuse; Use of National Flag Vessels Promoted By Major Importers

The worldwide shortage of mariners and the severe competition among ship-owners is leading to drastic cuts in manning with sometimes fatal results. An article titled, *Modern Seafaring Can Kill You*, notes the rising rates of suicide, murder and poor health among Indian seafarers and details India's response on behalf of its mariners. India's director general of shipping, GS Sahni believes that severe competition has compelled international ship-owners to cut down on manning. "Crews that numbered 50-55 few years ago have now come down to just 20 or less. Stress and fatigue has become a part of seafarer's tough life. With total strength of 15, there's no time for the floating staff to interact with each other since they are kept busy all the time and there is no peer sense." Captain MM Saggi, a nautical advisor to the government of India, says that stress and fatigue have led to several incidents of suicide, murder or seafarers going missing. "Ship-owners employ fewer seafarers, otherwise they feel they run the risk of going out of business. A situation develops where some employ fewer persons, yet keep whipping the crew and using them as slaves."

An official from the Indian shipping directorate notes that, "Indian ships do not face such problems because seafarers have their unions and as a result of the large manpower available, there is 20-25% more persons on board." A similar approach is taken in the U.S. by the Coast Guard in tightly regulating the minimum required number of mariners to safely operate a vessel under U.S. flag. The certificate of inspection (COI) ensures that proper manning of vessels for both the safety and security of the vessel and its cargo. However, in the international shipping business, the flag flown over the stern (registry) determines the wages paid and the minimum standards followed. As the Indian example shows, some registries promote a lowest common denominator where strict employment and environmental standards no longer apply. This underscores the importance of the choosing the right people, both shoreside and at sea, for the sensitive job of carrying LNG to our coasts.[xvii]

India's Shipping Ministry also took the lead in requiring Indian manning and Indian registry for LNG vessels importing to the Indian coastline. For the time being, the Indian Ministries of Commerce and Petroleum & Natural Gas has prevailed in the internal battle, handing India a set back in its efforts to build a domestic flagged LNG fleet. However, Some of the world's largest importers of LNG, Japan and Korea, are an increasingly powerful consumer of LNG, have made registry of LNG ships a matter of national maritime policy. "Japan transported about 43% of its total LNG import of 59.1 million tons in 2003 on Japanese owned and controlled ships. Similarly, Korea transported about 61% of its LNG imports of 19.3 million tons in the same year on Korean controlled ships. In the combined import of Japan and Korea, third-party owned ships constituted only 8.3 percent," says a shipping industry representative.[xviii]It is notable that Japanese and Korean controlled vessels are in respectable registries and do not cut corners on crewing in order to compete on the world market.

India's Shipping Ministry has attempted to rejuvenate its merchant marine by requiring Indian manning and Indian registry for LNG vessels importing to the Indian coastline. However, another branch of the Indian government, the Indian Ministries of Commerce and Petroleum & Natural Gas, has prevailed in the internal battle, handing India a set back in its efforts to build a domestic flagged LNG fleet.

Superior Domestic Maritime Resources: Calhoon MEBA Engineering School

The Marine Engineers' Beneficial Association operates a world renowned training facility, the Calhoon MEBA Engineering School (CMES), in Easton, Maryland. The school is fully accredited and certified by the U.S. Coast Guard and Det Norske Veritas (DNV). The MEBA School provides LNG training to organizations such as the U.S. National Transportation Safety Board and Transportation Safety Board of Canada & Transport Canada.

The MEBA training facility trains both deck and engineering officers and has recently installed a cutting-edge Bridge Simulation System designed and built by TRANSAS USA. The simulator is one of the newest and most sophisticated systems in the world. The interactive program allows students to simultaneously control simulated ships utilizing any of 56 different types of vessels in over 20 different ports. In addition to the ten ships that can be controlled within one scenario, instructors can further intensify the simulation by implanting multiple computer-controlled ships into the scenario. Unlike many existing bridge simulators, each station, operating a different type of vessel (including LNG vessels), can interact with every other station simultaneously. The LNG cargo simulation program allows students to dock, load and discharge LNG vessels. Moreover, the computerized system even encompasses the terminal-side operations of an LNG facility. It accommodates upgrades to adapt to ever-evolving Coast Guard and International Maritime Organization training and testing requirements.

The Calhoon MEBA Engineering School (CMES) prides itself in developing and offering courses before the need becomes apparent in the US marine transportation industry. Relevant courses meeting today's LNG training needs include Tankship Liquefied Gases

(LNG). This course has been part of the MEBA training core since 1975. It provides U.S. Coast Guard Licensed Deck and Engine Officers with the knowledge to safely and efficiently transport LNG. This LNG course is a USCG prerequisite for employment aboard LNG carriers. The class includes comprehensive lecture, lab work, and computer training as well as LNG science, engineering systems, cargo systems, stability, and safety. This course complies with the IMO Code for the LNG Vessels.

XII. Conclusion

With 97% of all cargo imported to United States being carried on vessels that are not registered under the American-Flag and not crewed by U.S. citizens, one would think that the safe and secure transportation of security sensitive cargo would be a serious concern. More to the point, at this time 100% of all Liquefied Natural Gas that enters the United States is carried on ships staffed by non-U.S. citizen mariners. The MEBA strongly believes that the use of American mariners is a critical component to the safe and secure importation of LNG to the United States.

With this in mind, some responsible corporate citizens in the LNG sector have recently agreed to expand their crewing practices to include U.S. citizen crews on LNG tankers. These companies, Suez LNG/Neptune, Excelerate/Northeast Gateway and Freeport-McMoRan, must be commended. We must also praise Maritime Administrator Sean Connaughton and the Maritime Administration for their efforts to promote American mariners on LNG tankers. Without their help, the progress made with these companies would have been much more difficult.

We look forward to working with Congress and the Administration moving forward to further protect our communities and maritime infrastructure.

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[i] Annual Energy Outlook 2005, Energy Information Administration, U.S. Department of Energy, February 2005, Table 13.

[ii] Mr. Wright cites the Annual Energy Outlook 2005, Energy Information Administration, U.S. Department of Energy, Table 13, which reaches the conclusion that production from conventional underground gas deposits is projected to decline between now and 2025. This decline is somewhat offset by increased gas production from non-conventional domestic gas sources (most notably coal-bed methane), increased production from deep water sources (greater than 200 meters) in the Gulf of Mexico, and commencement of deliveries of Alaska gas to the lower 48 states. The Alaskan volumes are problematic according to Mr. Wright, because there has been no application to construct necessary infrastructure to transport the gas, and the timeline from application to first delivery is approximately 10 years.

[iii] The National Energy Board of Canada states, the Western Canadian Sedimentary Basin (WSCB) accounts for more than 90% of the gas production in Canada and for about 23% of North American natural gas production annually. In the last few years, gas production from the WSCB appears to have flattened after many years of growth, leading to increased uncertainty about the ability of industry to increase or even maintain current production levels from the basin over the longer term. See, Canada's Conventional Natural Gas Resources: A Status Report, National Energy Board, April 2004, pp. 9-10.

[iv] Exports of gas to Mexico have increased greatly in the last few years. These exports do not constitute a large out-flow of gas at present. However, the Mexican economy is growing and if it continues to grow, its demand for natural gas will increase and require the United States to import an increasing amount of gas to meet, not only domestic needs, but also the needs of Mexico. In other words, what Mexico imports and

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shares today by way of natural gas, Mexico may not be able share later. Jeff Wright, Chief, Energy Infrastructure Policy Group, Office of Energy Project, Federal Energy Regulatory Commission, Fall 2005.

[v] *Poaching War for Crews Erupts*, Fairplay International Shipping Weekly, February 24, 2005.

[vi] Id.

[vii] SIGTTO News, September 2005, p.5.

[viii] *Poaching War for Crews Erupts*, Fairplay International Shipping Weekly, February 24, 2005.

[ix] *Near Calamities in Cargo Operations*, Fairplay International Shipping Weekly, December 1, 2005.

[x] *Poaching War for Crews Erupts*, Fairplay International Shipping Weekly, February 24, 2005.

[xi] *LNG Crewing Shock*, Tradewinds, February 25, 2005

[xii] *Philippines Dangles $18,000 Carrot*, Tradewinds, January 9, 2006; See also, *LNG Wage Anger*, Tradewinds, November 4, 2005; *Officer on $320,000 a year, claims Sigtto*, Tradewinds, November 4, 2005.

[xiii] Tradewinds, Insurers Get LNG Jitters, LNG Ships Facing Premiums Boost, March 17, 2006

[xiv] Id.

[xv] Id.

[xvi] Id.

[xvii] *Modern Seafaring Can Kill You*, Fairplay International Shipping Weekly, April 20, 2006

[xviii] *Foreign Flag Vessels May Bring Down LNG Import Costs*, The Hindu Business Line, December 13, 2005.

Testimony of

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Before the Transportation and Infrastructure
Subcommittee on
Coast Guard and Maritime Transportation
U.S. House of Representatives

Hearing on
Safety and Security of Liquefied Natural Gas and Impact on Port Operations

April 23, 2007

My name is Richard R. Hoffmann and I am the Director of the Division of Gas – Environment and Engineering, in the Office of Energy Projects (OEP) at the Federal Energy Regulatory Commission (FERC or Commission). I am here as a staff witness and do not speak on behalf of any Commissioner. Our Division is responsible for the environmental review of interstate natural gas pipelines and storage facilities; and, more significantly for today's session, the environmental and safety review and oversight over the construction, operation, and safety of onshore and near-shore liquefied natural gas (LNG) terminals. We also share security responsibilities for these facilities with the U.S. Department of Transportation (DOT) and the U. S. Coast Guard (Coast Guard), which has primary responsibility under the Maritime Transportation Security Act of 2002.

I want to thank you for this opportunity to speak today and specifically to address how through our extensive design review process we ensure the safety and security of LNG import facilities and the related LNG shipping. Also, I will describe how we include environmental impact review, along with extensive opportunity for public and agency input, into our overall assessment process.

Overall, the safety record of the industry is exemplary. LNG terminals in the United States have never had an LNG safety-related incident that harmed the public or the environment. Similarly, no shipping incidents have occurred worldwide that resulted in a significant loss of cargo during the almost 50 years of LNG transport. I will first describe the measures we use to provide for safe and secure LNG import terminal siting, construction and operation. Next, I will briefly address the measures taken to ensure the continuing safety history of LNG shipping.

Last, I will describe the process to date for the pending AES Sparrows Point and will summarize the issues before the Commission.

Safety, Security and Siting of LNG Import Terminals

Be assured that consideration of public safety is the Commission's highest priority when fulfilling its Congressional mandate under the Natural Gas Act to regulate facilities for the importation of natural gas. The Commission has been proactive in addressing safety concerns and rigorously applies high safety standards to these projects. When projects meet our safety standards and are found to be in the public interest, the Commission will approve them. If a proposed project falls short of these standards, the Commission will reject it, as was done with the proposed Keyspan LNG Terminal Project in Providence, Rhode Island.

The excellent safety record of the LNG import facilities in the United States extends over the past 35 years. The siting and oversight of LNG facilities are governed by a comprehensive scheme of federal regulation that guarantees that the FERC and other federal agencies work together to ensure public safety. The FERC's LNG project review process works to address all siting and operational issues with the full participation of the federal and state agencies, and the public. Once in operation, FERC oversight and inspection are on-going programs for the life of the facility.

Approvals and Authorizations Required

The Energy Policy Act of 2005 in Section 311 confirms that FERC has exclusive authority to approve or deny an application for the siting, construction, expansion, or operation of an LNG terminal onshore and in state waters. This siting authority is exercised in concert with a number of other federal authorities such as the Coast Guard, the U.S. Army Corps of Engineers (COE), and state approvals under the Coastal Zone Management Act, Clean Air Act and Clean Water Act (Federal Water Pollution Control Act). An example of this is our close work with the Coast Guard, which must issue a Letter of Recommendation (LOR) for LNG tankers to make deliveries to a terminal. A terminal operator must obtain an LOR from the Coast Guard before it would be allowed to accept tanker deliveries. Similarly, the state must issue the permits noted above for a project to move forward. Also, the U.S. Army Corps of Engineers must issue approvals under the Rivers and Harbors Act and Section 404 of the Federal Clean Water Act before construction can begin.

The FERC's Overall Assessment Process

Every aspect of our engineering and siting review and our coordination with the Coast Guard and the DOT is geared toward assuring that a facility will operate safely and securely and in an environmentally sound manner. This review is broken into three distinct phases: pre-authorization review; pre-construction review; and pre-operation review.

Pre-Authorization Review -- During the pre-authorization phase, Commission staff addresses the safety and security and environmental aspects of an LNG import terminal by reviewing the site and facility designs and ensuring that the proposal meets the federal safety standards including design and operational features for safety and reliability. FERC regulations require that from the early stages of project development, potential applicants meet with FERC staff to describe the proposal and solicit guidance on required design features. This early meeting provides an opportunity for FERC staff to offer suggestions related to the environmental, engineering and safety features of the proposal and review conceptual designs.

When ready, a terminal applicant applies to begin the pre-filing process and submits a request to the Director of OEP which demonstrates that the proper contacts with appropriate federal state and local agencies and others have been made and sufficient project details are developed in accordance with the FERC regulations. The FERC's pre-filing regulations were promulgated in compliance with the Energy Policy Act of 2005 in Title 18 of the Code of Federal Regulations (CFR), Section 157.21. The FERC's pre-filing process is designed to be interactive and offers a significant number of opportunities for the public and agencies to get information about a project and to provide their views and concerns to the Commission. These opportunities for public involvement include open houses sponsored by the applicant, scoping meetings held by the FERC staff, interagency meetings to address all permitting issues, availability of the complete record via the Commission website, public site visits, and comment meetings where interested persons provide comments to the Commission including electronic filing options.

All of the information developed by the FERC and agency staffs concerning environmental, safety, and engineering issues is presented in a detailed independent environmental impact statement (EIS) which is released in draft for a 45-day comment period. This draft EIS includes staff's analysis of all issues raised during the scoping and

EIS preparation process. When the staff completes its review and analysis of all comments received on the draft EIS, it publishes a final EIS. The record in the proceeding is the ready for consideration by the Commission.

When pre-filing begins, we make sure that DOT and the Coast Guard are aware of new projects or proposed expansions. For example, we require that the applicant file its Letter of Intent (LOI) to operate LNG tankers to a proposed LNG terminal with the Coast Guard at this point. These activities occur over at least a six-month time span during the mandatory pre-filing period required by the Energy Policy Act of 2005.

Based on input from FERC staff, the project sponsors continue to develop the front-end-engineering-design (FEED) to be filed as part of the formal application for the proposed LNG facility. The design information, which must be contained in the formal application, is extensive and is specified by 18 CFR § 380.12 (m) and (o). In order to ensure that the filings are complete, FERC publicly issued "Draft Guidance For Filing Resource Reports 11 (Reliability and Safety) & 13 (Engineering and Design) For LNG Facility Applications" in December 2005. This document clarified the level of detail required for the engineering submittal so FERC staff can adequately assess the safety, operability, and reliability of the proposed design. We provided specific guidance and clarification as follows:

a. the level of detail, including a requirement for a hazard design review, necessary for the FEED submitted to the FERC;

b. LNG spill containment sizing and design criteria for impoundments, sumps, sub-dikes, troughs or trenches;

c. design spills to be used in the calculation of thermal and flammable vapor exclusion zones; and

d. use of the Coast Guard's Navigation and Vessel Inspection Circular 05-05 and the waterway suitability assessment process.

The level of detail required to be submitted in the proposed design will require the project sponsor to perform substantial front-end engineering of the complete facility. The design information is required to be site-specific and developed to the extent that further detailed design will not result in changes to the siting considerations, basis of design, operating conditions, major equipment selections, equipment design conditions, or safety system designs considered by the FERC during the review process. The required information must include all features necessary for commissioning, start-up, operation and maintenance of the facility, including details of the utility, safety, fire protection and security systems. Novel designs require additional detail for proof of concept.

A complete FEED submittal will include up-to-date piping and instrumentation diagrams (P&IDs). Information on these drawings allows FERC staff to begin assessing the feasibility of the proposed design. Adequate P&IDs will include:

- equipment duty, capacity and design conditions;
- piping class specifications;
- vent, drain, cooldown and recycle piping;
- isolation flanges, blinds and insulating flanges;
- control valves and operator types (indicating valve fail position);
- control loops including software connections;
- alarm and shutdown set points;

- shutdown interlocks;
- relief valve set points; and
- relief valve inlet and outlet piping size.

Once an application is formally made to the Commission, FERC staff performs a detailed review of the information supporting the proposed LNG facility design. Since the enactment of the Energy Policy Act of 2005, no later than 30 days after the application filing, the agency designated by the Governor of the state where the terminal is proposed may file an advisory report on state and local safety considerations. Before issuing an order authorizing an applicant to site, construct, expand, or operate an LNG terminal, the Commission shall review and respond specifically to the issues raised.

In the case of the Sparrows Point proposal, the State of Maryland Department of Natural Resources filed a Safety Advisory Report with the FERC on February 1, 2007. I will discuss that filing later in my testimony. During the analysis of the application, FERC staff compiles pertinent technical information to assess the design of the LNG facility. Although operability and reliability of the proposed design are considered, our primary focus is on the safety features that must be built into the system. This review is performed prior to any Commission approval and evaluates the safety of:

- the LNG transfer systems;
- storage tanks and process vessels;
- pumps and vaporizers;
- pressure relief, vent and disposal systems;
- instrumentation and controls;
- spill containment systems;

- hazard detection and control systems; and
- emergency shutdown systems.

Each LNG import terminal must have an extensive array of hazard detection devices to provide an early warning for the presence of combustible gases, fires, or spills of LNG and activate emergency shut-down systems. Using the submitted design, FERC staff assesses the conceptual hazard detection system, which typically consists of combustible-gas detectors, fire detectors, heat detectors, smoke or combustion product detectors, and low temperature detectors. Typically, each facility will have over 100 of these detectors.

Use of these active systems to shut down equipment automatically, and other passive safety protections, such as impoundments, are reviewed to ensure that appropriate safety provisions are incorporated in the plant design. A detailed layout of the passive spill containment system showing the location of impoundments, sumps, sub-dikes, channels, and water removal systems is evaluated to allow FERC staff to assess the feasibility of the location, design configuration, dimensions, capacity and materials of construction for this system. In accordance with Title 49 of the Code of Federal Regulations, § 193.2181, these spill containment systems must accommodate 110 percent of an LNG tank's maximum liquid capacity.

Active hazard control systems consisting of strategically placed dry chemical extinguishers; carbon dioxide or nitrogen snuffing equipment; high expansion foam systems; and fire-water systems throughout the terminal are evaluated in accordance with federal regulations and a project-specific fire protection evaluation. A detailed layout of the fire water system showing the location of fire water pumps, piping, hydrants, hose reels, and auxiliary or appurtenant service facilities is reviewed for adequacy.

In addition, each storage or process area containing LNG must be surrounded by an impoundment structure to contain and limit potential spills associated with that equipment. Based on the size and location of these impoundments, the project sponsor must establish exclusion zones so that the effects from potential LNG pool fires, as well as flammable vapors from an LNG spill which does not ignite, do not pose a hazard to the off-site public.

The calculation methods and acceptable criteria for the LNG facility exclusion zones are specified by the U.S. federal safety standards in Title 49 CFR § 193.2057 and 193.2059. In accordance with these regulations, the calculations are based on design spills specified by the National Fire Protection Association's 59A Standard (2001 version). The 59A Standard presents various design spills depending on the: type of equipment served by the impoundment; the type of tank; and the location/size of any penetrations into the tank. Exclusions zones are centered on the site impoundments and are based on both the downwind distance flammable vapors may travel and the distance to specified radiant heat flux levels.

For a spill which does not ignite, the distance from a design spill into an impoundment to the furthest edge of a flammable vapor cloud (*i.e.* 2.5% concentration of gas in air) must not extend beyond any plant property line which can be built upon. In the event of an ignited spill, the distance from the pool to the 10,000-, 3,000-, and 1,600 BTU/ft^2-hr thermal flux levels must be considered. The regulations require that a radiant heat flux of 10,000 BTU/ft^2-hr not cross any plant property line that can be built upon. A radiant heat flux of 3,000 BTU/ft^2-hr may not reach certain buildings (*e.g.* assembly, educational, health care, or residential structures) located outside of the facility property line. In addition, a radiant heat flux of 1,600 BTU/ft^2-hr may not reach any outdoor assembly areas of 50 or more persons outside of the facility property line. For exclusion zone areas associated with the 3,000-, and 1,600-BTU/ft^2-hr radiant heat flux levels, the operator must be able legally to control land uses within any portion of these zones extending beyond the terminal site to prevent damaging effects of an LNG pool fire from impacting public safety.

During the project review required prior to any Commission decision, FERC staff will verify the applicant's exclusion zone calculations in order to ensure compliance with the siting standards contained in 49 CFR 193, and place the results in the EIS.

Further, during the pre-authorization phase and beyond the cryogenic design review, each application for an LNG facility is subject to a detailed review by the FERC staff of numerous other studies and reports that applicants are required to complete. These include:

- seismic analyses;
- fire protection evaluations;
- threat and vulnerability assessments; and
- Operation and Maintenance manuals.

The information used for the pre-authorization review is gathered from the application, data requests, and a Cryogenic Design Technical Conference held with the applicant's design team. This meeting allows FERC staff and company engineers to discuss specific engineering-related issues. Representatives from the Coast Guard and

DOT, as well as state and local fire marshals, are invited to attend. Although the Coast Guard is generally in attendance to address facility issues, the issues specifically related to LNG vessel transit are more specifically dealt with during the Coast Guard's separate waterway suitability assessment (WSA) process.

The staff's conclusions and recommendations on the proposed design, including all safety measures, are presented in the Safety section of the publicly-released FERC EIS. Ultimately, these recommendations have appeared as conditions if a Commission Order authorizing the project is issued. In addition to design considerations, the Order may also contain other LNG-specific standard conditions that pertain to the safe operation and security of the facility. If the Commission decides that a project would be safe, is in the public interest, and authorizes it, continued review would occur during the pre-construction phase.

Pre-Construction Review -- If a project sponsor receives a Commission Order and decides to pursue the project, it will engage the services of an engineering, procurement, and construction (EPC) firm to commence detailed engineering of the facility. This process results in a "final design" that usually contains further development or minor refinements to the approved FEED on file with the FERC. For these modifications, the FERC Order requires the project sponsor to request approval for the change, justify it relative to site-specific conditions, explain how that modification provides an equal or greater level of protection than the original measure; and receive approval from the Director of OEP before implementing that modification. For more significant changes, the project sponsor would be required to file an amendment or a new application, initiating another extensive review at the Commission.

The final design will typically include hundreds of pages of detailed engineering drawings and specifications for every area and piece of equipment in the facility including the marine platform, transfer lines, tanks, sumps, pumps, compressors, vaporizers, and blowers. Only after FERC staff has reviewed the final design for a particular facility component to ensure it complies with all the safety conditions of the Order and that it conforms to the approved design on file, will authorization to construct that component be granted. We review large-scale issues such as the facility's final plot plan and location of equipment, tanks, and impoundments to verify that all exclusion zones remain in compliance with siting regulations. These final review checks will also confirm that the number, location, type, and size of hazard detection and hazard control equipment match or improve upon the approved design and that redundancy, fault detection, and fault alarm monitoring exist in all potentially hazardous areas and enclosures.

Prior to entering the detailed design phase, we require project sponsors to perform a hazard and operability study of the initial design. This study is intended to identify potential process deviations that could occur during operation and lead to personnel injury or equipment damage. The analysis proceeds by systematically identifying possible causes for operational deviations and the consequences of these deviations at numerous locations in the regasification process. Areas of concern typically include equipment failures, human failure, external events, siting issues, previous incidents, and safeguard or control failures. These causes and consequences are in turn used to evaluate the inherent safeguards in the design and to identify suitable design modifications as required. Examples of the additional safeguards that are required are: detection systems, prevention systems, procedural safeguards, active and passive safety equipment, emergency response procedures, and secondary containment.

During the pre-construction phase, FERC staff will review this study as well as review all piping and instrumentation diagrams, including every valve and thermocouple, to make sure that the overall safety of the final design provides an equal or greater level of protection as the original design approved by the FERC.

Furthermore, the design of some facility components such as the foundation of the LNG tanks will be reviewed by geotechnical experts who determine if the foundation structure is capable of safely supporting the load of a full LNG tank, even during seismic events.

In accordance with the Energy Policy Act of 2005, Commission Orders authorizing an LNG import terminal require the project sponsor to develop an Emergency Response Plan (ERP) in consultation with the Coast Guard and state and local agencies. Prior to any construction at the facility, this plan, which must also include cost-sharing provisions for safety and security, must be approved by the Commission. The ERP must include written procedures for responding to: emergencies within the LNG terminal; emergencies that could affect the public adjacent to an LNG terminal; and emergencies that could affect the public along the LNG vessel transit route. The ERP must be approved by the Commission prior to any final approval to begin construction at the terminal site.

Commission engineering staff reviews each ERP to ensure that the appropriate state and local agencies have been involved in preparing the plan, that the local Coast

Guard Marine Safety Office has been consulted and concurs, and that the following topics are completely addressed:

- Structure of the incident management organization of the LNG terminal; and name, title, organization, and phone number of all required agency contacts;
- Procedures for responding to emergencies within the LNG terminal - identification of the types and locations of specific emergency incidents that may reasonably be expected to occur at the LNG terminal due to operating malfunctions, structural collapse, personnel error, forces of nature and activities adjacent to the terminal;
- Procedures for emergency evacuation adjacent to the LNG terminal and along LNG vessel transit route; detailed procedures for recognizing an uncontrollable emergency and taking action to minimize harm to terminal personnel and the public; procedures for the prompt notification of appropriate officials and emergency response agencies based on the level and severity of potential incidents; and the sequence of such notifications;
- Plans for initial and continuing training of plant operators and local responders; and provisions for annual emergency response drills by terminal emergency personnel, first responders, and appropriate federal, state and local officials and emergency response agencies; and
- Documentation that the required consultation with the Coast Guard and state and local agencies has been completed through correspondence with consulting agencies, and minutes or notes of coordination meetings.

In addition, both the Energy Policy Act of 2005 and Commission Orders authorizing LNG terminals require that the ERP include a cost-sharing plan identifying the mechanisms for funding all project-specific security costs and safety/emergency management costs that would be imposed on state and local agencies. The cost-sharing plan must specify what the LNG terminal operator will provide to cover the cost of the state and local resources required to manage the security of the LNG terminal and LNG vessel, and the state and local resources required for safety and emergency management, including:

- Direct reimbursement for any per-transit security and/or emergency management costs (for example, overtime for police or fire department personnel);
- Capital costs associated with security/emergency management equipment and personnel base (for example, patrol boats, fire fighting equipment); and
- Annual costs for providing specialized training for local fire departments, mutual aid departments, and emergency response personnel; and for conducting exercises.

To assist our review of the cost-sharing plan, we request the LNG terminal operator to include a letter of commitment with agency acknowledgement for each state and local agency designated to receive resources.

FERC and other federal agencies work with state and local entities, as well as the general public, to ensure that all public interest considerations are carefully studied and weighed before a facility is permitted and allowed to begin construction and operate, and that public safety and the environment are given high priority. No construction may commence until the Director of OEP finds that all safety requirements have been met.

Pre-Operation Review -- Once construction of the project has been authorized to begin, in addition to the terminal operator and vendor quality control inspections which occur continuously, Commission staff inspects each site at least once every eight weeks to ensure that project construction is consistent with the designs approved during the pre-authorization and pre-construction review phases.

During these inspections, Commission staff physically examines the entire site to verify the ongoing construction activities in each area. Staff confirms that the locations of individual process equipment under construction are in accordance with the approved site design, ensuring that the safe distances required between property lines, equipment, and facilities are being maintained. Staff verifies that all site activity and equipment under construction comply with the conditions of the Order that are applicable for that phase of the project. Commission engineers also meet with the owner's project design engineers to discuss any modifications or design refinements that may result from the detailed design phase of development - for example, adjustments considered necessary as a result of equipment vendor specifications or other insights realized during construction.

In addition, staff reviews both the owner's and the EPC firm's quality assurance plans to verify that rigorous and stringent quality control inspections are being conducted by both parties during all phases of the construction process. Inspections must apply to equipment and components being fabricated at manufacturing sites, material and equipment received at the construction site, specific assembly or fabrication methods employed during construction, and also the continuous verification of the precision and quality of all structural work carried out during the construction process.

Staff reviews all of the non-conformance reports generated by the project's quality control inspectors and how these incidents have been satisfactorily resolved. These deviations from the intended quality of work are evaluated by FERC staff to ensure that the final quality of the work will meet or exceed design requirements. Problems of significant magnitude are required to be reported to the Commission within 24 hours.

During the later stages of the typical three-year construction period, FERC staff monitors the EPC contractors' efforts to commission (*i.e.*, test and start-up) the various process systems and equipment throughout the terminal in preparation for the commencement of commercial operations. Commission staff is actively involved in the commissioning phase to verify that the final, constructed facility complies with the design authorized by the Commission Order, and that the project sponsor has complied with all conditions. This review includes verification that all of the cryogenic design recommendations in the Order applicable to the facility's pre-construction and construction phases have been fulfilled. Multiple on-site inspections are performed to confirm the construction and location of all plant equipment, process systems, and safety systems, including:

- Verifying LNG spill containment structures for completion of walls, piping, correct slope, size, materials used, sump pumps, and instrumentation for cold detection shutoff, and confirmation that proper materials have been used to complete containment;
- Checking critical instrumentation against the P&IDs with the actual piping, valves, and controls; and the instrument readouts, controls, and alarm/shutdown functions in the plant control room;

- Confirming that all required hazard detection devices (combustible gas, fire, smoke, low temperature) have been installed, including an examination of the cause and effect diagrams and instrument locations for appropriate redundancy and "alarm" and "shutdown" conditions. The physical inspection also evaluates detector location and orientation for blind spots that may require additional hazard detection devices;
- Confirming that all dry chemical, carbon dioxide, or other fire extinguishing units/bottles have been installed. The devices are checked to confirm proper weight and areas have been covered;
- Confirming that all critical pressure relief valves have been installed, have proper discharge orientation, and vent collection systems are operable;
- Confirming that the entire firewater system is in place, including monitors, hydrants, pumps, screens, deluge and water supply, and has been tested for operation;
- Checking each LNG storage tank's equipment including elevation bench marks, rotational devices, liquid level gauges, pressure and vacuum relief valves, and discretionary relief valves for proper installation and confirming that all permanent covers have been installed. After cool-down, the fill lines and tank penetrations are inspected for presence of excessive low temperature conditions;
- Checking critical, required alarms and shutdowns, including set points (*e.g.*, tank foundation temperatures, send-out temperature shutdown set points) within the plant's control room and satellite control centers;

- Confirming that all temporary construction structures have been removed and the facility complies with National Electrical Code Division requirements; and
- Confirming that the plant's emergency shutdown system has been tested and is fully operational, including that all required systems have been tied into it.

Prior to operation, each LNG tank is hydrostatically tested to gauge the tank's ability to handle expected loads. During the hydrostatic test, the FERC Order will require the project sponsor to include a reliable measurement system to monitor any deflections in the tank foundation or structure during the hydraulic test. At a minimum, this system must include as many monitoring points as is necessary so that sag, warping, tilt, and settlements can be monitored. Tolerances for sag, tilt, and shell warping must meet or exceed the limits specified by the tank manufacturer. In this manner, the strength of the tank is thoroughly examined under loads similar to what will be experienced in actual operation. The final design review will ensure that adequate plans for such testing are in place for all facility components.

As part of the pre-commission inspection, FERC staff also reviews the Start-up Manual, Safety Plan Manual, and Operations and Maintenance Manuals applicable to the installation. This review includes verifying that the terminal staff has received the necessary training to operate the plant or new systems, if an existing plant is being expanded. We confirm that the plant has employed the required staffing with a level and function appropriate for the facility.

FERC staff confirms that all plant security systems are in place (personnel, cameras, and other equipment), and that the Facility Security Plan is current. This review also includes confirming that all spare equipment that was authorized is on site and properly installed.

FERC staff also checks the entire facility site to ensure that all recommended environmental mitigation measures including erosion and sediment controls are in place, are being properly maintained, and that the company is making prudent steps to ensure that the site is properly stabilized for the operational life of the facility (*e.g.*, installation of shore line stabilization mats and rip rap).

Prior to operation, FERC staff also reviews the facility security to ensure compliance with the authorized design. Principal concerns are compliance with the DOT regulations, as well as sufficient levels of security provided by surveillance cameras; intrusion detection systems; security fencing; and on-site access control plans.

Only after all of the above-identified inspections and reviews have been successfully completed would FERC staff recommend that the terminal is ready for operations. The Director of OEP must issue a letter to the company that authorizes commencement of service from the facility.

Prior to operation, the terminal must also satisfy other federal agency requirements. For example, the facility must have a Facility Security Plan approved by the Coast Guard and a Vessel Transit Management Plan prepared by the Coast Guard and port stakeholders.

FERC oversight continues after an LNG import terminal project commences commercial operations. In fact, the Office of Energy Projects was reorganized to specifically create a Compliance Branch that is dedicated to ensuring that all FERC requirements, including safety and security measures, are complied with throughout the life of the project. Each LNG facility under FERC jurisdiction is required to file semi-annual reports to summarize plant operations, maintenance activity and abnormal events for the previous six months. LNG facilities are also required to report significant, non-scheduled events, including safety-related incidents (*e.g.*, LNG or natural gas vapor releases, fires, explosions, mechanical failures, unusual over-pressurization, major injuries) and security-related incidents (*e.g.*, attempts to enter site, suspicious activities near the plant site or around the marine terminal), as soon as possible but no later than within 24 hours. In addition, FERC staff conducts annual on-site inspections and technical reviews of each import terminal throughout its entire operational life. The inspection reviews the integrity of all plant equipment, operation and maintenance activities, safety and security systems, any unusual operational incidents, and non-routine maintenance activities during the previous year. Ultimately, the Director of the Office of Energy Projects has the authority to take whatever measures are necessary to protect life, health, property or the environment.

We are proud of our track record working with DOT, the Coast Guard, state agencies, and with all interested stakeholders on these projects, and we are committed to continuing LNG's outstanding operational performance.

The Safe History of LNG Shipping

In addition to ensuring safe and secure terminal sites, FERC coordinates closely with the Coast Guard to ensure the safety and security of the LNG vessel transit to the import facility. Under our pre-filing regulations, applicants are required to certify that they have submitted a Letter of Intent and preliminary WSA with the Coast Guard when initiating the pre-filing process. The WSA is reviewed by the Coast Guard and members of the local Area Maritime Security Committee. The Coast Guard generally convenes a working group consisting of members of the local Area Maritime Security Committee, federal agencies, state and local law enforcement, state and local firefighters, maritime and security professionals, and key port stakeholders throughout the port area.

Under Coast Guard supervision, this group, through a series of focused meetings, brings together its viewpoints to form a consensus on appropriate measures and mitigation needed to manage responsibly the safety and security risks posed by LNG marine traffic. At these meetings, FERC staff serves as the LNG technical advisor to the working group, provides insight from our participation in other waterways, and assists in identifying credible hazard scenarios. The group's detailed recommendations from the meetings are presented to the Coast Guard to assist in the Captain of the Port's review of the applicant's WSA. Based on its review, the Captain of the Port will make a preliminary determination on the suitability of the waterway and present it to the FERC in a Waterway Suitability Report (WSR).

The WSR filed with the Commission, preliminarily determines whether the waterway is suitable for LNG vessel transits, from both a safety and security perspective, and identifies additional resources that may be required. The results of this analysis are incorporated into the draft EIS and released for public comment. The 45-day comment period usually includes a public meeting near the proposed facility and along the pipeline route. In this manner, after public comment has been received and the final EIS is published, the Commission has a complete record on the suitability of the waterway and potential resource requirements prior to deciding whether to approve a particular LNG import terminal.

Since the beginning of commercial operations in 1959, LNG carriers have made over 46,000 voyages worldwide without a significant release of cargo or a major accident involving an LNG carrier. In no instance has an LNG cargo tank been breached either by an accidental or intentional event.

Any LNG carriers used to import LNG to the United States must be constructed and operated in accordance with the International Maritime Organization's (IMO) *Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk*, the *International Convention for the Safety of Life at Sea*, as well as 46 CFR Part 154, which contain the United States safety standards for vessels carrying bulk liquefied natural gas. Foreign flag LNG carriers are required to possess a valid IMO Certificate of Fitness and a Coast Guard Certificate of Compliance.

LNG carriers are well-built, robust vessels employing double-hull construction, with the inner and outer hulls separated by about 10 feet. The LNG cargo tanks are further separated from the inner hull by a layer of insulation approximately one-foot thick. As required by the IMO conventions and design standards, hold spaces and insulation areas on an LNG carrier are equipped with gas detection and low temperature alarms. These devices monitor for leaks of LNG into the insulation between primary and secondary LNG cargo tank barriers. In addition, hazard detection systems are also provided to monitor the hull structure adjacent to the cargo tank, compressor rooms, motor rooms, cargo control rooms, enclosed spaces in the cargo area, specific ventilation hoods and gas ducts, and air locks.

Even in the few instances worldwide where there have been incidents, the integrity of LNG vessel construction and safety systems has been demonstrated. One of the more significant incidents involved the *El Paso Paul Kayser* which grounded on a rock in the Strait of Gibraltar during a loaded voyage from Algeria to the United States in June 1979. Extensive bottom damage to the outer hull and the ballast tanks resulted; however, the cargo tanks were not damaged, and no cargo was released.

There have been a few other instances where LNG ships have grounded. In 1980, the *LNG Taurus* grounded near the entrance to Taboata Harbor, Japan. The grounding resulted in extensive bottom damage, but the cargo tanks were not affected and no cargo was released. The ship was refloated and the cargo was unloaded. In 2004, the *Tenaga Lima* was grounded on rocks, due to a strong current while proceeding to open sea East of Mopko, South Korea. The ship's shell plating was torn open and fractured over an approximate area of 20- by 80-feet. Internal breaches allowed water to enter the insulation space between the primary and secondary membranes. However, the ship was refloated, repaired, and returned to service. Although damage was incurred when these LNG ships were grounded, their cargo tanks were never penetrated and no LNG was released.

In another incident, the *Norman Lady* was struck by the nuclear submarine *USS Oklahoma City* while the submarine was rising to periscope depth near the Strait of Gibraltar in November 2002. The LNG carrier sustained only minor damage to the outer layer of its double hull but no damage to its cargo tanks.

More recently, the *Khannur* had a cargo tank overfill into the ship's vapor handling system during unloading at Everett, Massachusetts, in 2001. Approximately 100 gallons of LNG were vented onto the protective carbon-steel decking over the cargo tank dome resulting in several cracks. After inspection by the Coast Guard, the *Khannur* was allowed to discharge its cargo. In 2002, the *Mostaefa Ben Boulaid* had LNG spill onto its deck during loading operations in Algeria. The spill, which was believed to be caused by overflow, caused brittle fracturing of the carbon steelwork. The ship was required to discharge its cargo and proceed to dock for repairs. Although all these incidents resulted in an LNG release, there were no injuries in any of these incidents.

The most recent incident occurred in 2006 when the *Golar Freeze* moved away from its docking berth during unloading in Savannah, Georgia. The powered emergency release couplings on the unloading arms activated as designed, and transfer operations were shut down, preventing release of significant amounts of LNG or any structural or environmental damage.

After inspection and onsite clearance by FERC staff and the Coast Guard, the arms were reactivated and transfer operations resumed without incident.

The low number of LNG tanker incidents can be attributed to the careful handling of the tankers, as well as safety and security procedures used in the ports. The transit of an LNG vessel through a waterway is strictly controlled by the Coast Guard to prevent accidental or intentional incidents that could damage the vessel or endanger the public. Entry into a port typically involves Coast Guard requirements such as:

- 96 hours advance notification of arrival and the vessel crew manifest;
- Coast Guard boarding of the LNG Vessel for an inspection of the ship safety system;
- Moving safety/security zones around the LNG vessel;
- Armed and unarmed escorts;
- Tug escort to assist with turning and mooring operations;

- Safety and security zones around the terminal dock while the vessel is berthed;
- Accompaniment by a state-licensed pilot; and
- Inspection of the dock safety systems before commencing cargo transfer.

With these operational measures, the transit of LNG carriers has been demonstrated to be safe along the waterway from the berthing area to the territorial sea.

In summary, LNG is a commodity which has been and will continue to be transported safely in the United States. The U.S. Coast Guard, the U.S. DOT and FERC are committed to ensuring that safety. As a matter of policy, the Commission is committed to continually raising the bar on energy infrastructure safety. As new safety measures, improved monitoring equipment, and enhanced safety and security protocols are developed, the Commission will ensure that LNG remains a safe and secure fuel source for the country.

Commission Review Process for the AES Sparrows Point Proposal

The sponsors of the AES Sparrows Point proposal were required to follow the pre-filing requirements of the Energy Policy Act of 2005 and the Commission's pre-filing regulations issued on October 7, 2005. After initial consultation meetings with the Commission staff, AES filed its pre-filing request on March 24, 2006. The filing certified that the LOI and the preliminary WSA had been submitted with the Coast Guard on March 3, 2006. The pre-filing request was accepted by the Commission on April 3, 2006.

On April 24, 2006, the sponsors of the AES Sparrows Point proposal commenced a series of public open houses at locations in the vicinity of the proposed terminal and pipeline route to explain their proposal and to help identify issues that would need to be addressed in the application. The first open house in Dundalk, Maryland near the terminal site was attended by Commission environmental and engineering staff to answer the public's questions about the review process and safety issues in general.

On May 16, 2006, the Commission issued its Notice of Intent to Prepare an Environmental Impact Statement and announced a series of local public scoping meetings to be conducted by Commission environmental staff. Public scoping meetings were conducted on June 5, 6, and 7, 2006, in Sparrows Point, Maryland; Downingtown, Pennsylvania; and Bel Air, Maryland, respectively. In addition, site visits were conducted along the proposed pipeline route on June 6 and 7, 2006, and at the proposed terminal site on July 26, 2006. These local scoping meetings and site visits provided still another forum for the public to identify their environmental and safety concerns with the proposal. At each meeting a court reporter transcribed all comments made which subsequently became part of the public file maintained by the Commission. Written comments were also solicited, and nearly 400 letters from the public, federal, state, and local officials have been received into the FERC record.

Following the open houses and public scoping meetings, AES commenced preparing and submitting drafts of the 13 environmental and engineering resource reports for Commission staff to review and provide comments. During this period, the follow-on WSA report was submitted to the Coast Guard on October 25, 2006.

AES filed its formal application on January 8, 2007. The proposed LNG terminal would be developed on 80 acres of a 175-acre land parcel located on the peninsula of Sparrows Point, east of the Port of Baltimore in Baltimore County, Maryland. The facility would consist of a marine terminal, three on-shore storage tanks, vaporization equipment, and various support buildings and systems. The three full-containment storage tanks would each be 170-feet high and 270-feet in diameter with capacity to store 160,000 m^3 of LNG. In addition, an 87.6-mile-long, 30-inch-diameter pipeline would extend from the facility through Baltimore, Harford, and Cecil Counties, Maryland and Lancaster and Chester Counties, Pennsylvania to an interconnection near Eagle, Pennsylvania. The pipeline would have a planned capacity of 1.5 billion standard cubic feet of natural gas per day.

LNG would arrive at the AES terminal by ship and be offloaded to the storage tanks, vaporized to natural gas, and transported to consumers by the pipeline. Operating at full capacity would require offloading a ship every two to three days. The natural gas would be delivered to markets in the Mid-Atlantic Region and northern portions of the South Atlantic Region via the pipeline. In addition to the LNG facility, AES proposes to build a dredge material recycling facility on 5 acres of upland property adjacent to the LNG facility. During the 18- to 24-month construction phase, the project sponsors propose to dewater and process dredged sediment into a form suitable for shipping off-site. The application estimates that as much as 4.0-million cubic yards of dredged material would be generated for recycling.

As stipulated by the Energy Policy Act of 2005, the Maryland Governor's office filed the Maryland State Advisory Report on February 7, 2007. The advisory report, which highlights state and local concerns, includes comments compiled by the Maryland Department of Natural Resources (MDNR) intended to assist the FERC, the COE and the Coast Guard in review of safety and environmental concerns with the proposed project. Issues raised by the MDNR include the safety of the proposed project, as well as its impacts to the state's environment and economy. Specifically, the MDNR expressed concerns about the requirements of remote siting; adequately addressing threats posed by adjacent land uses; providing for the safe evacuation of the public in the event of an emergency; addressing the significant environmental impacts associated with dredging, air emissions, and pipeline construction; and economic impacts to the commercial and recreational activities in the Port of Baltimore and in the Chesapeake Bay.

The application is currently under FERC staff review. On March 16, 2007, we sent questions to the applicant to address issues raised by FERC staff, the public and other agencies, including MDNR. The data request also included questions about environmental resources adjacent to the entire vessel transit route beginning at the U.S. territorial seas. AES filed a data response on April 5, 2007 and it is currently under review. We issued an additional data request on April 3, 2007 regarding engineering design issues. A response to that letter is pending. Once FERC staff has reviewed the filed data response, consulted with our cooperating agencies, and made a determination that we have adequate information to complete our analysis, a Notice of Schedule for Environmental Review (NSER) will be issued. The NSER will identify the our schedule for publishing the draft and final EISs. This notice will alert agencies issuing federal authorizations to complete the necessary reviews and issue their determinations within 90 days of issuance of the final EIS.

The next steps are for FERC staff to conduct a technical conference concerning the engineering design of the proposed facility. FERC staff will complete a comprehensive review of the proposed terminal design and safety features, as described earlier in my testimony. Once FERC staff has analyzed the data responses, collected other information, consulted with the other agencies and completed its technical analysis, we will issue a draft EIS. The draft EIS can only be completed after we receive the WSR from the Coast Guard and must include an analysis of any environmental impacts of its recommended actions. Local public meetings on our draft EIS will be conducted near the proposed terminal site and pipeline route to solicit public comments. Written comments from all interested parties will also be accepted throughout the 45-day comment period.

Issues Raised During Scoping – Next, I will identify some of the principal issues that were raised during the pre-filing scoping process regarding each aspect of the project, including shipping and the construction and operation of both the terminal and the pipeline. Shipping issues focused mainly on the safety and security of the vessels during transit, including items such as spills, fires or terrorists targeting the tankers during transit; potential costs to the community to provide adequate safety and security measures; and potential impacts on nearby bridges (*i.e.*, whether bridges or channels need to be shut down during vessel transit). Other shipping issues relate to the potential economic impacts of the security zones on recreational and commercial boaters, fishermen and crabbers that use the river, as well as economic impacts affecting the revitalization of the Baltimore Harbor area and the Chesapeake Bay environmental recovery efforts. Specifically, commenters have expressed concerns over the potential dimensions and timing issues associated with the potential security zones around LNG vessels during transit, and what overall impact frequent LNG traffic would have on watercraft and others who use the Chesapeake Bay, Patapsco River, and Bear Creek. The commenters want to know the potential risks that would be encountered by the public during transit activities and what protective measures would be employed to protect the public from these risks. As previously mentioned, the safety and security issues associated with LNG vessel transit are being closely reviewed by the Coast Guard with the Area Maritime Security Committee and port stakeholders.

Issues raised regarding the dock and terminal construction focused on the dredging and disposal of 3.5 to 4.0 million cubic yards of sediment from the proposed turning basin and channel. Concerns were raised that the area has been previously contaminated from the steel operations and other industrial uses in the area with PCBs, PAHs, metals, dioxins, tributyl tin, arsenic and mercury, as examples. Specifically, commenters were concerned that dredging activities would disturb contaminated sediments that have been buried for many years, creating a toxic health impact on living organisms in and connected to the Chesapeake Bay ecosystem. Comments were also made concerning the disposal options available for this amount of material, since contaminated material disposal sites are of limited availability in the area.

FERC staff is working closely with the COE to analyze impacts associated with dredging. Dredging issues would need to be approved by the COE for the Clean Water Act (CWA), Section 404 permit as well as the Maryland Department of the Environment for CWA Section 401. Currently, AES's proposal is to process the dredged material onsite for reuse as fill material in unspecified locations in Maryland. This proposal will be fully reviewed for inclusion in the FERC EIS.

Other issues raised regarding the operation of the LNG terminal included air quality, environmental justice, impacts to neighboring industrial facility operations, and property value impacts and safety/evacuation for the closest residential communities, specifically Turner Station which is located about 1.2 miles from the proposed terminal across the Patapsco River. Commenters also were concerned about the U.S. Department of Housing and Urban Development (HUD) regulations regarding separation distances from LNG facilities and how the proposed project would affect future HUD funding.

Our air quality impacts analysis will analyze whether the proposal complies with the General Conformity Rule established under the Clean Air Act by the U.S. Environmental Protection Agency (EPA). Separate determinations of conformity must be made by the Maryland Department of the Environment (MDE), the Virginia Department of Environmental Quality (VADEQ), and the Pennsylvania Department of Environmental Protection (PADEP). FERC staff will be working with these agencies to complete the air quality review for the proposed project for inclusion in the EIS. Socioeconomic impacts, including environmental justice, property values and impacts on neighboring communities will also be analyzed in the EIS and released for public comment.

The pipeline route proposed is mostly adjacent to existing rights-of-way for roadways and other utilities. Commenters have expressed concerns regarding health and safety, impacts to nearby schools and historic districts, impacts on property values and other socioeconomic issues, impacts on septic systems and private wells, groundwater and surface water contamination, disturbances to wetlands and forested wildlife habitat, endangered species impacts, impacts to public lands and state parks, and disturbance to agricultural operations during construction of the proposed project. The MDNR also raised concerns about the proposed pipeline location within or near road/interstate rights-of-way and whether this would hinder future road expansion.

FERC staff will ensure that each issue identified is adequately addressed in the appropriate section of the draft EIS before it is released for public comment.

That concludes my prepared testimony. I will be happy to answer any questions you may have.

Statement of
The Honorable Martin O'Malley
Governor of the State of Maryland
Before the Subcommittee on the Coast Guard and Maritime Transportation
Committee on Transportation and Infrastructure
United States House of Representatives
April 23, 2007

Introduction:

Mr. Chairman, Ranking Member LaTourette, and members of the Committee, I appreciate the opportunity to appear before you today on behalf of the citizens of Maryland and with my distinguished colleagues, Maryland's Senior Senator, Barbara A. Mikulski, and Baltimore County Executive James Smith – who have long served the people of our state.

Chairman Cummings has a long and successful record of public service to the citizens of Maryland as well. In each office he has held, constituent service and the pursuit of fair treatment of all citizens have characterized all of his actions. He continues to be known as a staunch fact finder who demands frank responses. We are proud that he represents our State in Congress.

We greatly appreciate the Committee taking its valuable time to visit Maryland and discuss this issue of great concern to our state and our citizens. The Chesapeake Bay is a state treasure and a resource valued by all citizens, and we are committed to protecting it. A decision by the Federal Energy Regulatory Commission – otherwise known as "FERC" to permit location of a new Liquefied Natural Gas Facility at Sparrows Point, Maryland would be of critical concern to our State. On February 5, 2007, the State of Maryland submitted formal documents to FERC that comprehensively enumerated its points of opposition to the facility siting as well as many issues that prompted it to take that position.

I understand that today's discussion is focused on particular matters of concern to this committee, so I will limit my comments to those concerns – Safety, Security and Impact on Port Operations. These topics mirror some of the most serious concerns of our citizens – the safety and security of working people who live and thrive in communities adjacent to this site.

Before I begin, I also want to comment on the importance of the Port of Baltimore to our State – not just to the City of Baltimore. The Port of Baltimore is a major source of personal and business revenues in the State of Maryland. In addition, the following facts relate to the Port:

- It was responsible for $2.4 billion in personal wage and salary income in

2005;

- It generated $1.9 billion in business revenues in 2005 ;
- It directly facilitated $1.1 billion in local purchases by dependent businesses;
- It generated $278 million in state, county and municipal taxes; and
- Through it, the U.S. Customs Service collected $507 million in 2005.

Combining direct, induced and indirect jobs with related jobs, there are approximately 128,000 jobs linked to the Port. Any change in our Port's character, effectiveness, and efficiency or of the adjacent communities will have impacts far and wide.

Safety and Security Concerns:

Remote Siting:

FERC regulations require "remote siting" of an LNG facility (i.e. not near a densely populated area). The Sparrow Point Project is not a case of "remote siting."

According to the Natural Gas Act, remote siting is a primary consideration in terms of safety. The State of Maryland's interpretation of "remote siting" is that LNG terminals should be preferentially placed in remotely populated areas and prohibited in densely populated areas. The size of the parcel where the Sparrows Point facility is proposed is small in comparison to other LNG facilities, meaning the potential for incident escalation is likely to be inherently higher than other facilities of similar capacity.

Emergency Evacuations:

The proposed Sparrows Point project is on a peninsula with very limited ingress and egress to evacuate the public or provide emergency responders in the event of an accident at the site.

The State of Maryland has significant concerns with respect to emergency response resources and capabilities in the event of a significant LNG release. A primary concern relates to the inability to evacuate the immediate surrounding area in the event of an emergency at the facility. Specifically, the existing roadway infrastructure has limited egress routes and is located on a peninsula, further limiting any potential expansions to the existing roadways. An additional concern is the fact that a significant portion of the immediately surrounding population communicates primarily in languages other than English, which could potentially lead to failed communication during an emergency. Furthermore, there are a substantial number of schools and religious establishments located in the immediate vicinity of the proposed facility, increasing the potential number of individuals present during an emergency evacuation.

In addition to concerns regarding ingress and egress during an emergency evacuation, the State of Maryland also has concerns regarding emergency response capability. Neither Baltimore County, the surrounding counties, nor the State of Maryland itself has sufficient equipment or adequately trained staff to respond to an emergency situation at an LNG facility or ship. Currently, these emergency response capabilities do not exist, and the training and equipment necessary to respond in an emergency situation would require significant capital expenditures and resource allocation by federal, State, and local governments.

Ignition Sources:

The project will be located about one mile from the second largest blast furnace in the United States (Mittal Steel), and an ethanol productions facility (ECRON) is to be located even closer. Both facilities are ignition sources that increase the risk of an accidental explosion or flash fire at the proposed Sparrow Point LNG facility.

The terminal is located approximately one mile from the second largest blast furnace in the United States. In the event of a large LNG release, the adjacent steel foundry, Mittal Steel, would give rise to sources of congestion and confinement for dispersion of flammable gas (and the accompanying possibility of a vapor cloud explosion) in addition to multiple direct and indirect ignition sources.

Furthermore, another potential concern is the neighboring proposed ethanol production plant north of the terminal. This facility represents yet another ignition source and heightened risk of explosion or fire at the Sparrows Point LNG Facility. These collective ignition sources and the attendant risks to workers, property and the surrounding community require serious and exhaustive evaluation.

Inadequate Opportunity for Review:

The fast-track FERC process requires very quick review and response as to an extremely complex and technically involved project, limiting Maryland's abilities to adequately and fully review and reply. Additionally, the U.S. Coast Guard is required to evaluate the waterway for safety and security impacts and to provide those findings ("Waterways Suitability Report" or WSR") to FERC and others for review and comment. To our knowledge, the Coast Guard has not yet submitted its WSR for review.

Impact on the Operations at the Port of Baltimore:

The Maryland Port Administration (MPA) works to maintain the safe and efficient passage of cargo vessels through the Chesapeake Bay and Baltimore Harbor. This is done in coordination with the U.S. Army Corp of Engineers (USACE), as part of the State's Dredged Material Management Program that oversees dredged material placement. MPA also coordinates waterside navigation and security matters with the U.S. Coast Guard and other state and/or federal agencies.

Regarding future terminal space for the Port of Baltimore, it is important to understand that it is in short supply, and the future of terminal development, like the trend in shipbuilding, is for speculation of larger tracts. The Sparrows Point peninsula represents the last underutilized property of its kind and size in the Baltimore Harbor and therefore needs to be preserved for this future use. Over the course of this year, the MPA should be finalizing its plans for a dredged material containment facility (DMCF) and an active terminal at Sparrows Point, and at this time, it will communicate how these plans would likely be impacted by the AES proposal.

Dredged Material Placement

While other State and federal agencies play a major part in reviewing and permitting dredging activities, the MPA's role for the Harbor is largely focused on material placement. None of the LNG project's dredged material has been proposed for placement at MPA facilities. AES has a correct understanding that MPA containment facilities will not be made available for the proposed LNG facility. Dredging for the LNG project is scheduled to occur from mid-2008 to mid-2010. The Hart-Miller Island Dredged Material Containment Facility (DMCF) is scheduled to cease dredged material placement operations on December 31, 2009 and would not have sufficient remaining capacity to accommodate the LNG project in any case. The proposed Masonville DMCF is expected to commence operation within this same time frame, but in combination with the MPA's existing Cox Creek facility, it will only accommodate two thirds of Baltimore Harbor's existing average annual dredging requirements.

It is, moreover, expected that up to four million cubic yards of material will need to be dredged for the LNG project. AES proposes that the most cost effective way to dispose of this material is to process it on-site and to sell it as a beneficial re-use of the material. Given our understanding of the higher costs normally associated with beneficial re-use and the limited on-site area available for this process, this plan as contemplated does not appear viable. A market study needs to be performed to demonstrate the material recycling case, and the viability of upland and ocean dumping needs to be explored in much greater detail than has been glossed over in the reports.

Future MPA-Dredged Material and Containment and Terminal Facilities

As stated above, with the closing of HMI and the limited annual capacity that the Cox Creek and the proposed Masonville containment facilities will provide, the completion of another DMCF project by no later than 2013 is paramount to meeting the Harbor's dredging needs in the immediate future. The MPA is studying the feasibility of, and making plans for, that next site to be at Sparrows Point. To this end, MPA is currently developing an environmental impact statement (EIS) for plans to construct a DMCF at Sparrows Point. This is the only site available that can meet the 2013 deadline and provide the additional capacity to meet the annual need to dredge in Baltimore Harbor. In response to input by federal environmental agencies and citizens, the MPA is working to configure and design a placement site at Sparrows Point which is primarily an upland site with limited, minimal intrusion into the water, and with sufficient capacity to be economical while also allowing for future terminal development.

Ultimately, it is anticipated that this facility will be paved over and converted to a marine terminal once it reaches its ultimate capacity for dredged material. For this reason, there are dike height limitations which serve to decrease the ultimate DMCF capacity. Therefore, nearly 500 acres would be required to provide the same capacity as the previously proposed in-water site. While the MPA has primarily focused on the Southwest corner of the Sparrows Point peninsula, it is exploring ways to meet the need for capacity and to construct the dredged material placement site and eventual marine terminal by also looking at the current shipyard site up to the Northwest corner.

If the MPA is successful in constructing a dredged material placement site and marine terminal at Sparrows Point, and if an LNG terminal is also successfully sited there, the MPA has other concerns regarding restrictions on adjacent land uses. For example, a situation in which cargo operations had to cease while an LNG ship is at berth would be intolerable.

The physical location and layout of the facility and its berthing configuration should not constrain or impede current land uses and waterside needs of neighboring and contiguous properties. Demand for terminal expansion continues to intensify, and it is the MPA's current plan for the entire land area immediately south of this property to become a future marine terminal. We would like the record to clearly reflect that there is a need for AES to fully explain how the proposed LNG facility might support our desire and plans to meet the growing demand for terminal services there.

LNG vessel characteristics need to be examined, particularly in light of water draft requirements. Based on a preliminary assessment of dredging needs for this project, it is expected that close to four million cubic yards of material will need to be dredged. This need alone will far outweigh our ability to contain dredged material, which will be limited to about one million cubic yards per year for the entire Baltimore Harbor after HMI closes in 2009. Reasonable, affordable and viable alternative disposal options must be identified for the disposition of this material.

MDOT desires to understand if and how AES can ensure the long-term feasibility of keeping the waterways open for the expected 130 ships per year that will visit its facility. The impact of vessel frequency on the safe and efficient flow of existing and projected future vessel transit through the channel must be addressed. Because of the very competitive business climate in which the State and private sector terminal operators work, any unreasonable shipping delay could cause loss of business and result in loss of income and jobs, not only now but in the future.

Ship Navigation

There are 16 nautical miles of 800-feet wide dredged channel from the Bay Bridge to the access channel to the proposed LNG terminal. Although the US Coast Guard has not yet made a recommendation as to the suitability of the waterway, it is anticipated that if the waterway *is* considered suitable, then a moving security zone will be required around inbound LNG vessels. The security zone for such vessels going to Cove Point prevents other vessels from being within 500 yards of a loaded LNG ship. This same security zone, if applied, could then impede the free movement of vessel traffic transiting to/from the Port of Baltimore, causing delays and costing customers incrementally for doing business at the Port.

Currently, the MPA is in a competitive race to attract and retain cruise lines and shipping lines to come up the Chesapeake Bay to the Port of Baltimore. We offer excellent service and extremely quick turn around times for vessels. However, since the LNG terminal will be a private terminal, there is little the MPA can do to influence its potentially considerable impact on the marine community for many years to come. Because of the potential for vessel delay, the proposed LNG terminal will give our existing and prospective customers another "bargaining chip" while negotiating rates at our terminals, or worse, a reason to do business with other ports. This terminal, if permitted, could be a strong reason not to come to Baltimore. This socio-economic impact needs to be carefully and extensively assessed in the EIS and given due consideration.

MDOT-MPA notes that water and landside security and emergency management issues are not clear and must be addressed. In addition, MDOT-MPA staffs feel that it would be unwise to reduce the safety/security zone and alternatively, that it is prudent to extend it where reasonable. A security zone would be needed around any LNG tanker in transit to or moored at the proposed terminal. We would need to establish or enhance warning processes and citizen/State employee communications at locations within the State including: the Bay Bridge, Francis Scott Key Bridge and associated facilities, and Sandy Point State Park. Maryland believes that if this proposal moves forward, AES should provide the funding required to develop, implement, and operate such necessary infrastructure.

Additional Concerns:

Impacts on the Commercial and recreational use of the Bay:

LNG vessel traffic in the upper Bay and particularly in the project vicinity will affect historically available and projected commercial and recreational water uses. The vicinity has many marinas, private docks and a well-established and growing community of recreational boaters. The area also supports a viable community of commercial watermen - crabbers, clammers, and oyster and fin fishermen – who rely upon access to historically utilized fishing grounds. The marine exclusion zones that will certainly be imposed by the US Coast Guard to ensure the safety of the LNG-laden vessels will negatively impact these activities.

Environmental Justice:

The residents of the Sparrows Point and adjacent communities have historically been required to shoulder a disproportionate burden of environmental and health impacts from the heavy industries of the Sparrows Point. This proposal promises to exacerbate and propagate that pattern.

Closing:

In closing, again I want to thank the Committee for conducting this field hearing in our State and for allowing us to discuss these concerns and bring these issues to your attention. While Congress has given the Commission authority to make decisions on these matters, we are certain that it was never intended that such decisions be made without consideration of the impacts on communities, transportation systems, the environment, and commerce.

BALTIMORE COUNTY
MARYLAND

JAMES T. SMITH JR.
County Executive

Statement of
The Honorable James T. Smith, Jr.
Baltimore County Executive
Before the Subcommittee on Coast Guard and Maritime Transportation
Committee on Transportation and Infrastructure
United States House of Representatives
April 23, 2007

Mr. Chairman and other distinguished members of this Congressional subcommittee, thank you for the opportunity to speak here today on behalf of the residents of Baltimore County and all those who cherish the Chesapeake Bay.

As I am confident this panel will recognize, the proposed Liquefied Natural Gas facility at Sparrows Point poses a grave risk to the people and environment of not only Baltimore County, but of the entire region. The possibility of shipments of LNG into the heart of the Chesapeake Bay, with an 87 mile long pipeline transporting natural gas through populated areas is unacceptable. The citizens of Baltimore County have been unified in their opposition to this LNG plant. We have been joined in our opposition by our neighboring jurisdictions, along with our state and federal elected officials.

As elected officials we have a responsibility to look beyond any minimal economic benefits of this facility to the long-term safety of our citizens and our environment. It is our obligation to stand up for the people and the communities that will be affected by this proposed LNG plant. These communities deserve protection from the potentially life threatening situation thrust upon them by a national energy giant.

I would like to begin by addressing the process that has been used to date. When I testified last June 5th at the scoping meeting sponsored by FERC, I was very clear to everyone present, including the representative of the U.S. Coast Guard, that Baltimore County would be an active participant in the LNG mandated federal review process. Unfortunately Baltimore County's presence at the scoping meeting, our submission of the significant documentation to FERC, and our ongoing and highly visible opposition to this project did not result in Baltimore County being included by the Coast Guard in its preparation of the Waterway Suitability Assessment Report. We were not even made aware that the Coast Guard's preparation of this report was underway. While numerous

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other interest groups participated in the Waterway Suitability Assessment Report, not a single local government was invited to be part of this process.

Since we have been denied participation in this process and have not been provided with copies of the draft Suitability Report, it is difficult to comment on the issues identified and addressed in this report. It is disturbing that until this hearing, local governments were not included in this process. This exclusion has given the public little confidence in the overall FERC and Coast Guard review process to date. Hopefully, through the efforts of this Congressional subcommittee and the members of Maryland's Congressional delegation, the Coast Guard will be required to address this failure. At a minimum, I would hope that the Waterway Suitability Assessment Report will be put on hold until the Coast Guard incorporates and/or addresses issues identified by the local governments and other organizations that have been excluded from the process.

My second major concern addresses what I believe is the fundamental conflict of locating a highly volatile LNG facility in the heart of a densely populated area. Placing this facility in the Port of Baltimore conflicts not only with the operations of the Port itself, but also with recreational boating, and has the potential of damaging the Chesapeake Bay for generations to come.

The Chesapeake Bay is the largest estuary in North America and is an important part of our heritage and economy. For over twenty years federal, state and local governments and thousands of the Bay's citizens have struggled to restore and improve this national treasure. The Chesapeake Bay brings hundreds of millions of dollars to the state and the region every year through attracting waterfront residents, watermen, recreational boating, and chartered fishing fleets. Locating this LNG facility at the heart of the Chesapeake would undercut the immeasurable effort that has been expended by governments and the public to protect and restore this natural resource.

This proposed facility is also at odds with numerous provisions of The National Strategy for Maritime Security of 2005 and the remote siting considerations as provided in the 2005 Natural Gas Act. The National Strategy for Maritime Security is very clear when it identifies, "the following objectives will guide the Nation's maritime security activities: Prevent Terrorist Attacks and Criminal or Hostile Acts Protect Maritime-Related Population Centers and Critical Infrastructures."

The Maritime Security report expounds on the objective of protecting maritime-related population centers and critical infrastructures. The report cites the USA Patriot Act of 2001 to define critical infrastructure as those "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters".

I believe we can all agree that Baltimore's Harbor, the 50 foot shipping channels, the Preston Lane Chesapeake Bay Bridges, the Mittal Steel plant, the Francis Scott Key Bridge, and the Brandon Shores Power Plant are all critical infrastructure to this region and the nation. A terrorist attack on an LNG vessel traveling into the Port of Baltimore, passing under the Chesapeake Bay Bridges and off loading a few hundred feet from the LNG conversion and storage facilities, poses a real and unacceptable danger to the critical infrastructure of this region and thereby to the United States.

At any point in a vessel's journey into the Port, we are essentially offering multiple opportunities for terrorists to create an unprecedented conflagration that could cripple access to the DelMarVa peninsula, block shipping channels into the Port or create a chain reaction of explosions between the vessel and land side facilities that would devastate the surrounding communities. Even more troubling, is that the current plan of emergency response agencies to a major incident involving an LNG vessel or facility is to just "let it burn itself out."

We all appreciate the brave service of the United States Coast Guard; however, they have been handed the impossible task of making the unacceptable, acceptable. They have been asked to try to defend an LNG Plant location that is at odds with our national policy: they are being asked to protect our citizens and the nation's critical infrastructure from known and unreasonable risks, yet at the same time to provide the justification to introduce a major flash point and target into the very heart of a heavily populated region, a major U.S. port and one of this nation's most environmentally sensitive resources.

This counter intuitive proposal defies logic. Bringing this kind of potentially volatile cargo over 100 miles into the Chesapeake Bay and Baltimore's Harbor is irresponsible. In this post 9/11 world, our nation's citizens expect more from the people and agencies who plan and permit facilities that are clearly potential terrorists targets. Placing this LNG facility adjacent to the heavily populated communities of Turner's Station, Edgemere, and Dundalk, and the Mittal Steel plant, will place thousands of citizens under the pressure of living and working in the shadow of this dangerous facility. While the LNG proponents will attempt to lull us into a false complacency generated by theoretical, computer--modeled security claims, it is our harbor communities that will be asked to bear the daily burden of anxiety.

The assurances of LNG proponents has been further eroded by the February 2007 Government Accountability Office report on potential terrorist attacks on LNG tankers. This report states that the Coast Guard uses a 2004 report by Sandia National Laboratories as a basis for conducting the security risk assessment for the Waterway Suitability Assessment.

There are numerous troubling findings in this GAO report. First, those involved in the study could not agree on the distance from a source that would, after 30 seconds, expose the public to a "heat hazard," which is Sandia's euphemism for a burn zone. They were unable to decide whether it was 1/3 mile or about 1-¼ miles. When we are dealing with the lives of thousands of American citizens, we need to be far more certain of the risk posed to them.

The text of this report contains a second even more troubling statement: "However, as the table shows, one of Sandia's scenarios-for a large spill with cascading failure of three LNG tanks-found the distance could exceed more than 2,000 meters [which is greater than 1 and a quarter miles] and that the cascading failure would increase the duration of the incident." This duration could be well beyond 30 seconds.

This report undercuts the assertion of the proponents and the computer model that a mile is a safe distance to minimize a 30-second burn factor. And the report does not address the potential for a vessel-based fire cascading onto the land-based facilities.

The GAO report made a number of recommendations to the Department of Energy, which according to the report, were accepted by the Department of Energy. These involve, but are not limited to, additional studies to more fully understand the impact of a failure of multiple LNG tanks. According to the GAO report, "The leading unaddressed priority the panel cited was the potential for cascading failure of LNG tanks." I understand that the Department of Energy is looking to additional studies in 2008 to begin to address some of the issues raised by the GAO report. Making decisions today without the benefit of these studies that could impact our safety is just plain reckless. It is also unacceptable to the thousands of residents of this region who will live with this LNG facility in their backyards.

Today, we are at a critical juncture in the decision-making process relative to the introduction of unacceptable threats to our citizens and nation's security. It would be irresponsible to proceed with the approval process for LNG shipping, facilities and pipelines without all the information as to the potential impacts to this region and our critical infrastructure. I am here today, on behalf of my colleagues on the Baltimore County Council and the people of Baltimore County, to oppose the proposed location of this LNG facility. The proposed LNG Facility at Sparrow's Point is a threat to the people, economy, and security of Baltimore County and the entire Baltimore region. It must be rejected.

Thank you.

U. S. Department of
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DEPARTMENT OF HOMELAND SECURITY

U. S. COAST GUARD

STATEMENT OF

RDML BRIAN SALERNO

AND

AND CAPT BRIAN KELLEY

ON THE

THE COAST GUARD'S ROLE IN LNG SAFETY AND SECURITY

BEFORE THE

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION

U. S. HOUSE OF REPRESENTATIVES

APRIL 23, 2007

Introduction

Good morning Mr. Chairman and distinguished members of the Committee. I am Rear Admiral Brian Salerno, the Director of the Inspection and Compliance Directorate at U.S. Coast Guard Headquarters. It is my pleasure to appear before you today to discuss the Coast Guard's role in providing for the safety and security of Liquefied Natural Gas (LNG) vessels and facilities, and how the Coast Guard is cooperating with other Federal Agencies on this important national issue.

As the Federal Government's lead agency for Maritime Homeland Security, the Coast Guard plays a major role in ensuring marine transportation of LNG, including LNG vessels, shoreside terminals and LNG deepwater ports, are operated safely and securely, and that the risks associated with the marine transportation of LNG are managed responsibly. Today, I will briefly review the applicable laws and regulations that provide our authority and the requirements for the safe and secure operation of the vessels, shoreside terminals and deepwater ports. I will also describe how the Coast Guard is working with the other Federal entities here today, as fellow stakeholders in LNG safety and security.

LNG Vessel Safety

The Coast Guard has long recognized the unique safety and security challenges posed by transporting millions of gallons of LNG or "cryogenic methane." LNG vessels have had ~~an enviable safety record over the last 45 years. Since international commercial LNG~~ shipping began in 1959, tankers have carried over 40,000 LNG shipments and while there have been some serious accidents at sea or in port, there has never been a breach of a ship's cargo tanks. Insurance records and industry sources show that there were approximately 30 LNG tanker safety incidents (e.g. leaks, groundings or collisions) through 2002. Of these incidents, 12 involved small LNG spills which caused some freezing damage but did not ignite. Two incidents caused small vapor vent fires which were quickly extinguished.

Today, there are over 200 LNG vessels operating worldwide and another 100 or so under construction. While there are no longer any US flag LNG vessels, all LNG vessels calling in the U.S. must comply with certain domestic regulations in addition to international requirements. Our domestic regulations for LNG vessels were developed in the 1970s under the authority of the various vessel inspection statutes now codified in Title 46 United States Code. Relevant laws providing the genesis for LNG vessel regulation include the Tank Vessel Act (46 U.S.C. 391a) and the Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1978 (33 U.S.C. 1221, *et. seq*). Regulations located in Title 46, Code of Federal Regulations (CFR) Part 154, "Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gasses," specify requirements for the vessel's design, construction, equipment and operation. Our domestic regulations closely parallel the applicable international requirements, but are more stringent in the following areas: the requirements for enhanced grades of steel for crack arresting purposes in certain areas of the hull, specification of higher allowable stress factors for certain independent type tanks and prohibiting the use of cargo venting as a means of cargo temperature or pressure control.

All LNG vessels in international service must comply with the major maritime treaties agreed to by the International Maritime Organization (IMO), such as the International Convention for the Safety of Life at Sea, popularly known as the "SOLAS Convention" and the International Convention for the Prevention of Pollution from Ships, popularly known as the "MARPOL Convention." In addition, LNG vessels must comply with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, known as the "IGC Code."

Before being allowed to trade in the United States, operators of foreign flag LNG carriers must submit detailed vessel plans and other information to the Coast Guard's Marine Safety Center (MSC) to establish that the vessels have been constructed to the higher standards required by our domestic regulations. Upon the MSC's satisfactory plan review and on-site verification by Coast Guard marine inspectors, the vessel is issued a Certificate of Compliance. This indicates that it has been found in compliance with applicable design, construction and outfitting requirements.

The Certificate of Compliance is valid for a two-year period, subject to an annual examination by Coast Guard marine inspectors, who verify that the vessel remains in compliance with all applicable requirements. As required by 46 U.S.C. 3714, this annual examination is required of all tank vessels, including LNG carriers.

LNG Vessel Security

In addition to undergoing a much more rigorous and frequent examination of key operating and safety systems, LNG vessels are subject to additional measures of security when compared to crude oil tankers, as an example. Many of the special safety and security precautions the Coast Guard has long established for LNG vessels derived from our analysis of "conventional" navigation safety risks such as groundings, collisions, propulsion or steering system failures. These precautions pre-dated the September 11, 2001 tragedy, and include such measures as special vessel traffic control measures that are implemented when an LNG vessel is transiting the port or its approaches, safety zones around the vessel to prevent other vessels from approaching nearby, escorts by patrol craft and, as local conditions warrant, coordination with other Federal, state and local transportation, law enforcement and/or emergency management agencies to reduce the risks to, or minimize the interference from other port area infrastructure or activities. These activities are conducted under the authority of existing port safety and security statutes, such as the Magnuson Act (50 U.S.C. 191 *et. seq.*) and the Ports and Waterways Safety Act, as amended.

Since September 11, 2001, additional security measures have been implemented, including the requirement that all vessels calling in the U.S. must provide the Coast Guard with a 96-hour advance notice of arrival (increased from 24 hours advance notice pre-9/11). This notice includes information on the vessel's last ports of call, crew identities and cargo information. In addition, the Coast Guard now regularly boards LNG vessels at-sea, where Coast Guard personnel conduct special "security sweeps" of the vessel and ensure it is under the control of proper authorities during its port transit. In order to protect the vessel from external attack, LNG vessels are escorted through key port areas. These armed escorts afford protection to the nearby population centers by reducing the probability of a successful attack against an LNG vessel. These actions are in addition to the safety and security oriented boardings previously described.

Of course, one of the most important post-9/11 maritime security improvements has been the passage of the Maritime Transportation Security Act of 2002 (MTSA). Under the authority of MTSA, the Coast Guard developed a comprehensive new body of security measures applicable to vessels, marine facilities and maritime personnel. Our domestic maritime security regime is closely aligned with the International Ship and Port Facility Security (ISPS) Code. The ISPS Code, a mandatory requirement of the SOLAS Convention, was adopted at the IMO in December 2002 and came into effect on July 1st 2004. Under the ISPS Code, vessels in international service, including LNG vessels, must have an International Ship Security Certificate (ISSC). To be issued an ISSC by its flag state, the vessel must develop and implement a threat-scalable security plan that, among other things, establishes access control measures, security measures for cargo handling and delivery of ships stores, surveillance and monitoring, security communications, security incident procedures, and training and drill requirements. The plan must also identify a Ship Security Officer who is responsible for ensuring compliance with the ship's security plan. The Coast Guard rigorously enforces this international requirement by evaluating security compliance as part of our ongoing port state control program.

All of the LNG vessels that have entered the Chesapeake Bay en route to Dominion Cove Point have been held to these strict safety and security standards. U.S. Coast Guard small boat station, Station St. Inigoes, presently conducts the security escort of the vessels into Cove Point and enforces the security zone around the vessel while she is moored at the terminal. The U.S. Coast Guard, working towards fulfilling MTSA's intent of layered and shared (among Federal, state, local and private sector) security responsibilities, is coordinating with the Calvert County Sheriff's Office for the enforcement of the fixed security zone around the terminal when a vessel is present, a job presently performed entirely by the Station. The facility operator, Dominion Cove Point LNG, is providing financial reimbursement to Calvert County for this security.

Shoreside LNG Terminal Safety and Security

Presently there are six shoreside LNG terminals in the U.S. and U.S. Territories: the export facility in Kenai, AK; and, import terminals in Everett, MA; Cove Point, MD; Elba Island, GA; Lake Charles, LA; and Penuelas, PR. Under Title 33, CFR Part 127, the Coast Guard has responsibility for the facility's waterside "marine transfer area" and the Department of Transportation's Pipeline and Hazardous Materials Safety Administration has responsibility for shoreside portion of the facility. The safety requirements regulated by the Coast Guard in the marine transfer area include electrical power systems, lighting, communications, transfer hoses and piping systems, gas detection systems and alarms, firefighting equipment, and operational matters such as approval of the terminal's Operations and Emergency Manuals and personnel training.

The recently promulgated "Maritime Security Regulations for Facilities," found in Title 33 CFR Part 105, were developed under the authority of MTSA. These regulations require the LNG terminal operator to conduct a facility security assessment and develop a threat-scalable security plan that addresses the risks identified in the assessment. Much like the requirements prescribed for vessels, the facility security plan establishes access control measures, security measures for cargo handling and delivery of supplies, surveillance and monitoring, security communications, security incident procedures and training and drill requirements. The plan must also identify a Facility Security Officer who is responsible for ensuring compliance with the facility security plan. The six existing U.S. LNG terminals were required to submit their security plans to the Coast Guard for review and approval in 2003 and full implementation of the plans was required by July 1, 2004. These reviews have been completed, and the terminals' compliance with the plans has been verified by local Coast Guard port security personnel through on-site examinations. In contrast to our safety responsibility, whereby our authority is limited to the "marine transfer area," our authority regarding the security plan can, depending upon the particular layout of the terminal, encompass the entire facility.

Dominion Cove Point's facility and terminal (as will the facility/terminal at AES Sparrows Point if it is approved) come under these regulations and are frequently inspected by U.S. Coast Guard Inspectors for adherence to safety and security requirements.

Shoreside LNG Terminal Siting

The issue of constructing new shoreside LNG terminals has been controversial, due in large part to public concerns over both perceived and actual risks to the safety and ~~security of LNG vessel operations. Under the Natural Gas Act, the Federal Energy~~ Regulatory Commission (FERC) has permitting authority, including safety review of facility siting, for LNG terminals onshore and within state waters. The Coast Guard does not determine or approve the shoreside facility's location.

However, the Coast Guard plays an important role in the siting process once it has begun. Along with an application to the FERC, an owner or operator who intends to build a new shoreside LNG facility, or who plans new construction on an existing facility, must submit a "Letter of Intent" to the Coast Guard Captain of the Port (COTP) in whose zone the facility is located (in accordance with by 33 CFR 127.007). This letter must provide information on: the physical location of the facility; a description of the facility; the characteristics of the vessels intended to visit the facility and the frequency of visits; and, charts that show waterway channels and identify commercial, industrial, environmentally sensitive and residential areas in and adjacent to the waterway to be used by vessels enroute to the facility, within 15.5 miles of the facility.

The COTP reviews the information provided by the applicant and issues a Letter of Recommendation (LOR) as to the suitability of the waterway for LNG vessels. Factors considered include: density and characteristics of marine traffic in the waterway; locks, bridges or other man made obstructions in the waterway; the hydrologic features of the waterway, e.g., water depth, channel width, currents and tides, natural hazards such as reefs and sand bars; and underwater pipelines and cables. If the waterway is found suitable the COTP will issue a Letter of Recommendation (per 33 CFR 127.009). In addition, the Coast Guard serves as a cooperating agency with FERC for purposes of National Environmental Policy Act (NEPA) review of the overall project.

Both the Coast Guard and the FERC recognize that the "Letter of Recommendation" process, which dates from 1988, does not, in its current form, adequately take into account the security concerns of our post 9/11 environment. Also, the existing regulations are focused primarily on conventional navigation safety risk management issues such as traffic density, hydrologic characteristics of the waterway, etc. They do not focus on port security risk management issues, and in particular, they do not directly require an analysis of the consequences of an LNG spill on the waterway proposed for vessel transits.

To address this problem, on February 10, 2004, the Coast Guard entered into an Inter-Agency Agreement (IAA) with FERC and RSPA to work in a coordinated manner to address issues regarding safety and security at shoreside LNG facilities, including terminal facilities and tanker operations, to work together, avoid duplication of effort, and to maximize the exchange of relevant information related to the safety and security aspects of LNG facilities and the related maritime concerns.

Soon after the completion of the IAA, work began on a more detailed guidance document for use by the involved agencies. On 14 Jun 05, the Navigation and Vessel Inspection Circular (NVIC) 05-05, "*Guidelines on Assessing the Suitability of a Waterway for LNG Marine Traffic*," was published to provide guidance on how to conduct and validate a Waterway Suitability Assessment so that full consideration is given to the safety and security of the port, the facility, and vessels transporting the LNG. Simply put, it established a uniform national process for conducting port-specific risk and waterway ~~suitability assessments.~~

Under the NVIC 05-05 guidelines, since the Coast Guard is also a cooperating agency for the preparation of the FERC's Environmental Impact Statement, this guidance assists the Coast Guard in obtaining all information needed to assess the proposed LNG marine operations and fulfill its commitment to FERC to provide input to their Environmental Impact Statement (EIS).

The Waterway Suitability Assessment (WSA) process put forth in the NVIC uses a risk management approach to developing mitigation measures for the hazards introduced to the affected waterway due to the nature of LNG. The NVIC requires the applicant to conduct a risk analysis of the waterway and propose mitigating measures. In addition, the applicant is required to do an analysis of the resources necessary to close existing resource gaps in proposed safety and security to perform the proposed mitigation measures. This WSA process usually begins very early in the process, typically during the FERC's pre-filing period.

Even though there wasn't a NVIC outlining this process, prior to the restart LOR given to Dominion Cove Point, the U.S. Coast Guard in COTP Baltimore and Hampton Roads worked closely with the applicant to conduct a detailed risk assessment very similar to what was later adopted for use in NVIC 05-05. From this risk assessment, an LNG operations manual for the Chesapeake Bay was developed outlining who was responsible for each of the safety and security risk mitigation measures.

In addition to an evaluation of conventional navigation safety risks, a critical part of the WSA is an analysis of an LNG spill on the waterway and the thermal effects from a resulting pool fire. The analysis includes the application of the hazard distances and zones of concern established by the spill consequence models described in the 2004 Sandia National Labs Report.

Once the FERC's EIS is published, it can be adopted by the Coast Guard if it meets all of the Coast Guard's NEPA requirements. If so, the Coast Guard issues a Record of Decision that adopts the EIS for our Letter of Recommendation process.

When the Coast Guard's WSA validation process is complete, the COTP makes a preliminary finding regarding the suitability of the waterway, whether the waterway can accommodate the proposed traffic and whether there is sufficient capability within the port community to responsibly manage the safety and security risks of the project. This preliminary finding is communicated to the FERC in a Waterway Suitability Report (WSR).

For the proposed terminal at Sparrow's Point, MD, AES Sparrow's Point LNG , LLC submitted a Preliminary WSA with their letter of intent and a Follow-on WSA a few months prior to formally filing their application with FERC. Coast Guard Sectors Baltimore and Hampton Roads, along with a subcommittee of representatives from their respective Area Maritime Security Committee and Harbor Safety Committees, reviewed the document. As a result of this review this review, the Coast Guard determined that additional information is required before the WSA can be completely validated and ~~before a jointly-signed WSR can be issued to the applicant. Before operations begin, the~~ Sectors' LNG Operations Manual will be expanded to include vessels transiting to Sparrows Point as well as Cove Point.

The WSR report conveys the assessment and analysis conducted by the applicant during the WSA process and it usually includes risk mitigation measures that the COTP determines is necessary for the vessel to safely and securely transit to the proposed facility. Once FERC receives the WSR, the report is incorporated into the EIS. FERC addresses the environmental impacts of the proposed vessel transits on the waterway, the environmental impacts of the proposed risk mitigation measures and the public safety and environmental impacts of a LNG spill and fire on the waterway. The COTP issues a "Letter of Recommendation" to the owner or operator of the proposed facility, and to the state and local government agencies having jurisdiction, as to the suitability of the waterway for the proposal (33 CFR 127.009).

The Coast Guard is also working on the regulatory changes in 33 CFR Part 127 necessary to bring the existing "Letter of Intent" and "Letter of Recommendation" regulations up to date, specifically by requiring the waterways management information to be submitted to the COTP at the time of FERC "pre-filing" or conventional application, and adding specific requirements for a port security assessment, in addition to the waterways management information, to be presented to the COTP for evaluation.

LNG Deepwater Ports: Authority and Agency Relationships

The Coast Guard's authority to regulate Deepwater Ports (DWPs) derives from the Deepwater Port Act of 1974 (DWPA). The regulations pertaining to the licensing, design, equipment and operation of DWPs are found in Title 33 CFR Subchapter NN (Parts 148, 149 and 150). Originally pertaining only to oil, MTSA amended the DWPA to include natural gas. This Act allows for the licensing of DWPs in the Exclusive

Economic Zone, outside of state waters, along all maritime coasts of the United States. The Secretary of the Department of Homeland Security (DHS) and the Secretary of DOT delegated the processing of DWP applications to the Coast Guard and the Maritime Administration, respectively. Maritime Administration, is the license issuing authority and works in concert with the Coast Guard in developing the Environmental Impact Statement, while the Coast Guard has primary jurisdiction over design, equipment and operations and security requirements. The DWPA established a specific time frame of no more than 330 days from the date of publication of a Federal Register notice of a "complete" application to the date of approval or denial of a DWP license. Among other requirements, an applicant for a DWP license must demonstrate consistency with the Coastal Zone Management Plan of the adjacent coastal States.

The Coast Guard and Maritime Administration,, in cooperation with other Federal agencies, must comply with the requirements of the National Environmental Policy Act in processing DWP applications within the timeframes prescribed in the Deepwater Port Act. To date the Coast Guard has received a total of 17 DWP applications, including five that have already been licensed: Louisiana Offshore Oil Platform, Chevron-Texaco's Port Pelican project (on indefinite hold), Excelerate Energy's Gulf Gateway project, Suez LNG North America's Neptune project, and Shell's Gulf Landing(Shell has effectively stopped forward movement on this project). Recently, the Maritime Administrator has issued Records of Decisions for three others: Freeport McMoRan's Main Pass Energy Hub, Suez's Neptune project and Excelerate Energy's Northeast Gateway. The latter two are off the coast of Massachusetts and the others are all offshore of Louisiana. Only the Gulf Gateway has been built so far. Three have been withdrawn and seven others are in various stages of processing. We are anticipating between two and four additional applications within the next several months.

To expedite the application review process, and more efficiently coordinate the activities of the numerous stakeholder agencies, the Coast Guard entered into a Memorandum of Understanding (MOU), involving more than a dozen agencies, including the Department of the Interior, FERC, NOAA, the Army Corps of Engineers and the Environmental Protection Agency. The MOU obliges the participating agencies to work with each other and with other entities as appropriate, to ensure that timely decisions are made and that the responsibilities of each agency are met. These responsibilities include: assessing their particular role in the environmental review of DWP licenses; meeting with prospective applicants and other agency representatives to identify areas of potential concern and to assess the need for and availability of agency resources to address issues related to the proposed project.

LNG Deepwater Ports Safety and Security

While conventional crude oil DWPs have been in operation around the world for many years, LNG DWPs are an emerging concept. Currently, there is only one in operation, off the coast of Louisiana. There are a variety of different designs under development that borrow from designs and technology that have been time-tested in the offshore energy and the LNG industries. Proposals include ship-shaped hull designs similar to existing Floating Production, Storage and Offloading (FPSO) units, platform based storage and regasification units, gravity based structures, and innovative docking structures that attach directly to the LNG carrier to serve as both a mooring and offloading system. Because this is a new concept, the Coast Guard's regulations apply a "design basis" approach, rather than mandate a series of prescriptive requirements. Under a "design basis" approach, each concept is evaluated on its own technical merits, using relevant engineering standards and concepts that have been approved by recognized vessel classification societies and other competent industrial and technical bodies. In addition, the Coast Guard's DWP regulations require that all LNG DWPs develop and implement a security plan that, at a minimum, will addresses the key security plan elements provided in Title 33 CFR Part 106, "Maritime Security: Outer Continental Shelf Facilities." A risk and consequence analysis is completed as part of the risk mitigation strategy and security measures are developed between the applicant and the Coast Guard local Captain of the Port.

Thank you for giving me this opportunity to discuss the Coast Guard's role in LNG safety and security and our relationships with other stakeholder agencies. I will be happy to answer any questions you may have.

Before the United States House of Representatives
House Committee on Transportation and Infrastructure
Subcommittee on Coast Guard and Maritime Transportation
Elijah E. Cummings, Chair

April 23, 2007

Safety and Security of Liquified Natural Gas and the Impact on Port Operations

Testimony of AES Corporation
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Supplying Additional Natural Gas to the Mid-Atlantic Region Considerations of Safety and Maritime Operations

I. INTRODUCTION

The AES Corporation is one of the world's largest global power companies operating in 26 countries with home offices in Arlington, Virginia. AES operates 123 power facilities generating 44,000 megawatts including the cleanest coal plant in Maryland located in Cumberland County. AES also developed, owns and operates the Andres LNG terminal and co-located combined cycle power plant in the Dominican Republic.

AES has proposed to build a natural gas import terminal at Sparrows Point, Maryland ("Project") in an effort to introduce a new incremental supply of natural gas into the Mid-Atlantic Region. The Project will provide natural gas customers with access to natural gas production centers throughout the world without the need to construct new long-haul pipelines or expand the existing long-haul interstate pipeline systems that currently serve the Mid-Atlantic Region. The Project will also introduce new natural gas storage facilities into the Mid-Atlantic Region.

Natural gas has increasingly become the fuel of choice in both the United States and the Mid-Atlantic Region due to the clean burning nature of the fuel and the efficiency of its use. In order to combat the threat of global warming, increased natural gas use must be part of the solution. A modern natural gas power plant emits half of the greenhouse gases emitted from a modern coal facility.

This increasing demand, however, is outpacing supply from traditional sources. The need for incremental sources of natural gas supply to meet growing demand is particularly acute in the Mid-Atlantic and surrounding regions of the United States due to distances from existing production areas and the fact that the existing pipeline capacity from those production areas is already fully utilized.

This testimony provides information on the increasing natural gas demands in the Mid-Atlantic Region, reviews the alternatives for meeting that increasing demand, then walks through the process used by AES to site its proposed liquefied natural gas ("LNG") import terminal at Sparrows Point ("Terminal Site"). AES's siting process considered safety and security issues as well as potential impacts on port operations and the environment.

II. NATURAL GAS NEED IN THE MID-ATLANTIC REGION

Natural gas demand for the Mid-Atlantic Region was approximately 2.4 trillion cubic feet ("Tcf") in 2005, representing approximately 11 percent of total U.S. natural gas consumption. The Energy Information Administration ("EIA") is projecting an approximate 1.3 percent compounded annual growth rate in natural gas demand for the Mid-Atlantic Region from 2005 to 2020, which will result in an increase from 2.4 Tcf in 2005 to 2.9 Tcf in 2020. Natural gas demand from the electric power generation and commercial segments has shown the most growth for the period 1995 to 2005. EIA projects that natural gas demand from electric power generation will continue to show the most significant growth for the period 2005 to 2030.

This increasing demand is confirmed in the "Energy Transition Report 2007: Maryland's Energy Future" that was prepared in February 2007. The Transition Report stated:

> Natural gas needs for Maryland have grown. Of the fossil fuels, natural gas is the cleanest burning for energy generation. Maryland imports over 99% of its gas through interstate pipelines, primarily sourced from the Gulf of Mexico region. Supply and cost disruptions are possible as seen in 2005-06 as a result of Hurricane Katrina. Currently, pipeline capacity is also constrained. Interstate pipelines that serve Maryland have been fully subscribed for several years. New capacity projects are in demand by local distribution companies (for non-power uses), large industrial users and power generation companies. Natural gas is the only significant power generation source that has been built in recent years, with over 60% of Maryland's natural gas electric fleet completed in the last decade (representing approximately 9% of summer capacity).
>
> * * *
>
> It is unlikely that, with the exception of LNG, large increases in gas supply in Maryland will occur. The volatility of gas prices is a continued concern.

Because natural gas prices set the price for electric power almost one-half of the hours of each year in the Mid-Atlantic Region, additional supplies of natural gas will help to reduce both natural gas prices and electric prices. This is especially important during these times of electric price increases.

III. THE AES PROJECT IS PREFERABLE TO POTENTIAL ALTERNATIVES

Given the forecasted decrease in production of natural gas in existing North American supply basins, LNG is projected to supply not only incremental natural gas demand, but it also could replace the projected reduction in other supply components (i.e., natural gas imports from Canada and certain United States production basins). Among alternatives to the AES Project is the construction of major new pipeline systems to provide an equivalent amount of capacity to bring natural gas to the Mid-Atlantic Region from the existing North American production regions. The primary drawback to this alternative is the fact that onshore conventional natural gas production is anticipated to decline from 4.8 Tcf in 2004 to 4.2 Tcf in 2030, while net pipeline imports are also expected to decline from 2004 levels of 2.8 Tcf to about 1.2 Tcf by 2030 due to resource depletion and growing domestic demand in Canada. The decline in overall supply from the west coast of the United States and Canada is coupled with an increase in consumption from 22.4 Tcf of natural gas in 2004 to 26.9 Tcf in 2030.

Building new pipeline systems to transport gas from LNG terminals in the Gulf of Mexico Region, would also require thousands of miles of pipeline construction to provide enough supply to fill the growing market demands in the Mid-Atlantic Region. This would have a significantly greater environmental impact, would be less reliable than importing the LNG directly to the demand center, and would cost more. Regarding reliability, construction of the AES project will provide a new natural gas storage facility to help ensure adequate supply in times of peak demand when the already full existing pipeline system cannot bring enough gas to the areas. Regarding cost, a Wall Street Journal article published last June estimated that the new pipeline alternative would "likely cost $1 to $1.75 per million British thermal units more than LNG....consumers will likely feel this inflation."

For these reasons, our analysis of alternatives outside of the Mid-Atlantic Region, which we have provided to FERC, do not appear to be commercially or environmentally feasible for serving this market. The best solution is direct importation of LNG.

IV. AES SITING SELECTION PROCESS

AES evaluated several factors to determine the extent to which alternative LNG terminal locations would be able to introduce a new incremental supply of natural gas into the Mid-Atlantic Region to meet the growing demand for energy in those markets in a safe, reliable, and economic manner. To meet this purpose, AES determined that, at a minimum, an LNG terminal site would need to satisfy the criteria below. All of the criteria are considered important to the determination of site alternatives.

- Geographic Location. Given the impracticality of siting an LNG terminal and associated pipeline facilities outside of the Mid-Atlantic Region to serve this market, it is necessary to locate the Project within the Mid-Atlantic Region. This allows adequate interconnections with existing natural gas pipeline systems in the vicinity of the Terminal Site. Because the Project also adds storage capacity in the Region, it provides immediate availability of natural gas supply without the constraints that exist on long haul pipeline capacity constraints in times of peak demands.

- Distance from Residential Concentrations. AES considered only locations for the Terminal Site and associated LNG transit vessel routes that were – at all times – greater than one mile from residential communities and population centers. While not required by any applicable regulations or recent practice, AES has made the corporate decision to follow this one-mile guideline. The guideline adopted by AES is based on recent studies conducted by Sandia National Laboratory ("Sandia") that sets out a worst-case marine-related thermal event as causing potential harm to persons within approximately one mile of an LNG spill. Studies cited by Sandia corroborate this distance. AES's decision to incorporate the one-mile guideline is consistent with recent findings published in the Government Accountability Office report titled "Maritime Security: Public Safety Consequences of a Terrorist Attack on a Tanker Carrying Liquefied Natural Gas Need Clarification" ("GAO Report"). The GAO Report noted the nearly universal agreement among experts that the one-mile distance was either "about right" or even "too conservative."

- Land Use Compatibility. AES examined existing land use and published community development plans in selecting its site. The AES Project complies with the heavy industrial zoning designation of Baltimore County.

- Technical and Economic Feasibility. AES investigated the technical and economic feasibility of constructing and operating an LNG terminal at the proposed site. Factors considered in this investigation include: site access to nearby deepwater port facilities (requiring a nominal 45-foot draft); access to adequate constructible land (requiring a nominal 40 acres); location within the natural gas markets intended to be served by the Project; and the ability of the site to accommodate the equipment and facilities necessary to safely and reliably operate the LNG terminal.

- Safety and Security. The selected site must be able to satisfy all applicable safety and security standards. The Sparrows Point site complies with all applicable federal safety and security regulations. Moreover, all safety and security aspects of the Project will be evaluated as part of the comprehensive Federal Energy Regulatory Commission ("FERC") review process and the U.S. Coast Guard's ("USCG") Waterway Suitability Assessment analysis. We are confident our Project will be found to meet or exceed applicable standards. We will, of course, comply with any recommendations or conditions required by these agencies.

- Landowner and Environmental Impact. AES also seeks to avoid or minimize potential impacts on landowners and to the natural environment, cultural resources and other stakeholders associated with the proposed Project. The information contained in AES's application to the FERC for approval to build and operate its proposed LNG facility at Sparrows Point demonstrates that this criterion has been satisfied with the selection of the Terminal Site. The FERC application (AES also filed applications with other federal agencies and State agencies in both Maryland and Pennsylvania) consisted of 13 volumes and several thousand pages of studies, reports, maps, charts, and other information that will form the basis of an Environmental Impact Statement.

V. SAFETY AND SECURITY

Both Sandia and the GAO Report confirm that safety and security for the public will be maintained by siting the Project more than one-mile from residential areas. Further confirmation of the low risk of an LNG terminal to adjacent populations and facilities is seen in the independent risk assessment issued on June 28, 2006 by the Maryland Power Plant Research Program relative to the recent expansion at the Cove Point LNG terminal in Calvert County, Maryland ("CP Risk Assessment"). The CP Risk Assessment concluded "that the quantified risks to populations and facilities. . . "**fall within a range considered acceptable relative to available industry criteria,**" . . . It is important to note that the AES terminal is even further from residential areas. [1] Also important for purposes of appreciating the relevance of the CP Risk Assessment vis-à-vis the AES Project is the fact that the shore side unloading platform associated with the AES Project is also farther from residential areas than the offshore unloading platform at Cove Point, and will be easier to monitor.

Aerial maps of the Cove Point facility and the proposed AES facility are included with this testimony.

In addition, in compliance with FERC, USCG, and other regulatory guidelines, AES will demonstrate that it has "considered and implemented all reductions to risks in the design and construction of the facility that are not disproportionate to the costs of those measures".

Certain opponents of the AES Project have stated that the Project might present a high-valued target to someone or some group with malicious intentions and that the facility was located in too close proximity to highly concentrated, residential and commercial areas. Those issues were examined by Richard A. Clarke, former White House Advisor to three Presidents on national security and counterterrorism, and he found that the proposed project represents an unlikely terrorist target due to its distance from commercial and residential areas. He categorized the location as being in the lowest risk level zone, and concluded that any risk associated with the project can be effectively managed. A summary of Mr. Clarke's finding is included with this testimony.

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[1] The storage tanks at Cove Point are single-containment design and therefore require external diking to contain the LNG in the extremely unlikely event of a failure of the inner tank. AES will use a full-containment design that is essentially a tank within a full integrity tank, thereby not requiring additional external containment. The outer tank is made up of additional insulation and reinforced concrete close to three feet thick. The tanks proposed to be constructed by AES represent the third generation of tank design that is significantly more robust than prior designs.

VI. IMPACT ON PORT OPERATIONS

An important factor considered by AES in siting the Project was to avoid or minimize disruption to commercial and recreational marine traffic while LNG vessels are in transit or at berth. AES is currently working in conjunction with the USCG to develop LNG vessel transit schedules and security zones that would provide the maximum amount of protection for LNG vessels, while at the same time minimizing disruption to commercial and recreational traffic. Different approaches to establishing and enforcing a moving security zone around inbound LNG tankers have been explored in an effort to accommodate as many waterway users as possible, without lessening security to an unacceptable degree.

In a proactive effort to minimize disruption to communities and commercial and recreational vessel traffic, AES sought advice and input from the Baltimore maritime community, the Chesapeake Bay Pilots, Baltimore tug operators, and the Maritime Institute of Technology and Graduate Studies ("MITAGS"). In fact numerous real time ship berthing maneuvers were performed at the MITAGS simulator[2] with the assistance of the Bay Pilots and existing tug operators. These berthing simulations were carried out with the support of the three new tractor tugs AES has proposed to be added to the Baltimore tug fleet to support the AES LNG operations.

Current vessel traffic transiting the Chesapeake Bay to the Port of Baltimore has seen a significant decrease in the amount of vessel traffic over the past few decades. The Baltimore Marine Exchange records show that in 2005 there were 2,119 ship arrivals to the Port of Baltimore compared to 4,033 arrivals in 1975. These numbers include deep draft cargo vessels, passenger vessels, and tug and tows approaching from the south and from the Chesapeake & Delaware Canal. AES's Project would introduce approximately 100 to 150 vessels per year into the Chesapeake Bay (two to three vessels per week). Increased vessel traffic and new modern tractor tugs supplied as part of the Project will help maintain the economic health of Baltimore maritime industry.

Because LNG vessels would be carrying cargo classified by USCG regulations as certain dangerous cargo or CDC, the USCG is required to establish a security zone around the vessels during their transit when they have the CDC onboard. The objective of establishing security zones is to safeguard vessels and waterfront facilities from destruction, loss, or injury from man-made acts, accidents, or other causes of a similar nature. **These same security zone requirements apply to any vessel carrying CDC such as petroleum, propane, or ethanol. The security zone requirements also apply to cruise ships.**

The introduction of additional LNG traffic in the Chesapeake Bay will have limited or no impact on existing large vessel traffic either in the Bay or for vessels calling at the Inner

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[2] The simulations were performed using the state-of-the-art marine vessel simulator at MITAGS. MITAGS is a world-class training facility located in Linthicum Heights, Maryland that provides, among many other marine training and education resources, thorough instruction for mariners and enforcement personnel relating to LNG ship operation and inspection.

Harbor. Existing ship management protocols utilized by the Maryland Pilots Association would ensure that orderly inbound and outbound traffic is not delayed or otherwise negatively affected. Once at the Terminal Site, LNG ships would have no impact on large vessel traffic as that traffic would be well outside the established security zone as they enter the Inner Harbor in the existing shipping lanes.

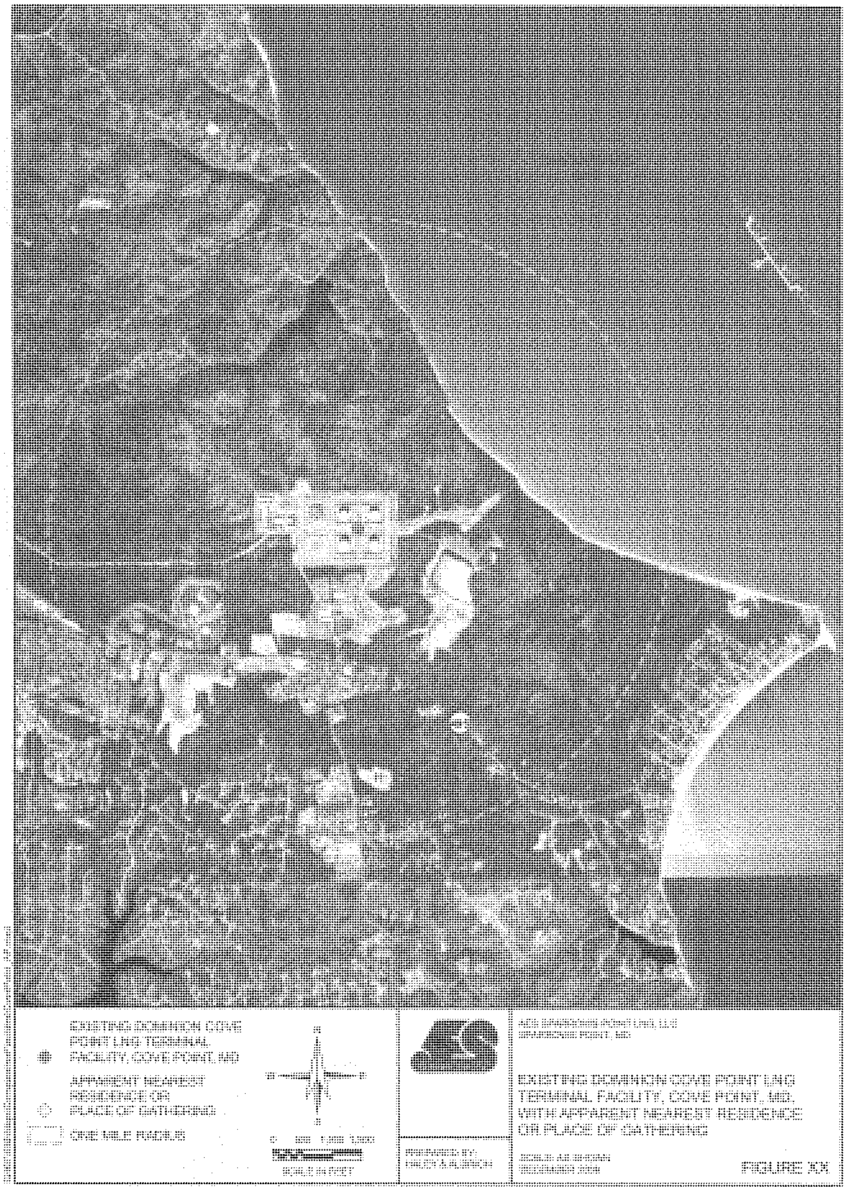
LNG shipping in the Chesapeake Bay may cause minor inconvenience to smaller vessel traffic due to the enforcement of the security zone around the LNG ships. The time-interval during which the security zone applies at any given point along the ship transit route is an important element to consider in assessing the inconvenience. The total time of impact depends on the speed of the ship and the size of the security zone. The table below identifies the various scenarios based on a 1,000 foot ship and an assumed 500 yard security zone fore and aft of the vessel, which can be envisioned as a 4,000 foot long bubble. As can be seen from the table below, the total impact time is in the range of a few minutes. It is important to note that any such restriction would apply only to loaded inbound LNG vessels; there would be no security zone restrictions for the outbound LNG ships as they would no longer be carrying CDC.

Speed (knots)	Security Zone (yards)	Impact Time (minutes)
20	500	1.97
15	500	2.63
10	500	3.95
5	500	7.90

Vessel speeds north of the Bay Bridge average between 10 and 12 knots. Thus, the total impact for boaters within the security zone would be less than four minutes, and limited to two to three times a week.

Potential impacts to small watercraft in the area of the Terminal Site would involve different considerations due to the slow speeds during the maneuvering process and the proximity of the transit route to the mouth of Bear Creek. Real-time vessel simulations performed at MITAGS for the maneuvering of LNG vessels from the Brewerton Channel, through the Shipyard Channel, and into the LNG berths at the LNG terminal site show that the total time for this maneuvering is about 45 minutes. Boaters transiting between the Terminal Site and Ft. Carroll would be restricted in their movements (for approximately 20 minutes) at certain points near the end of the maneuvering process as the LNG ship berthed. It is important to note that access into Bear Creek would never be completely cut off even during this maneuvering, as boaters could navigate around the west side of Ft. Carroll.

Commercial and recreational boaters could also be restricted in areas immediately around the Terminal Site while LNG vessels are at the berth. A fixed security zone of 500 yards is currently applied to the vessel berths at the Cove Point LNG terminal. The Project may be suitable for additional security measures, such as floating barriers, which could safely reduce the zone surrounding the vessel berth to less than 500 yards. The stationary security zone would impact commercial and recreational boaters in this small area adjacent to shipyard Pier 1 two to three times a week while LNG vessels discharge their cargos.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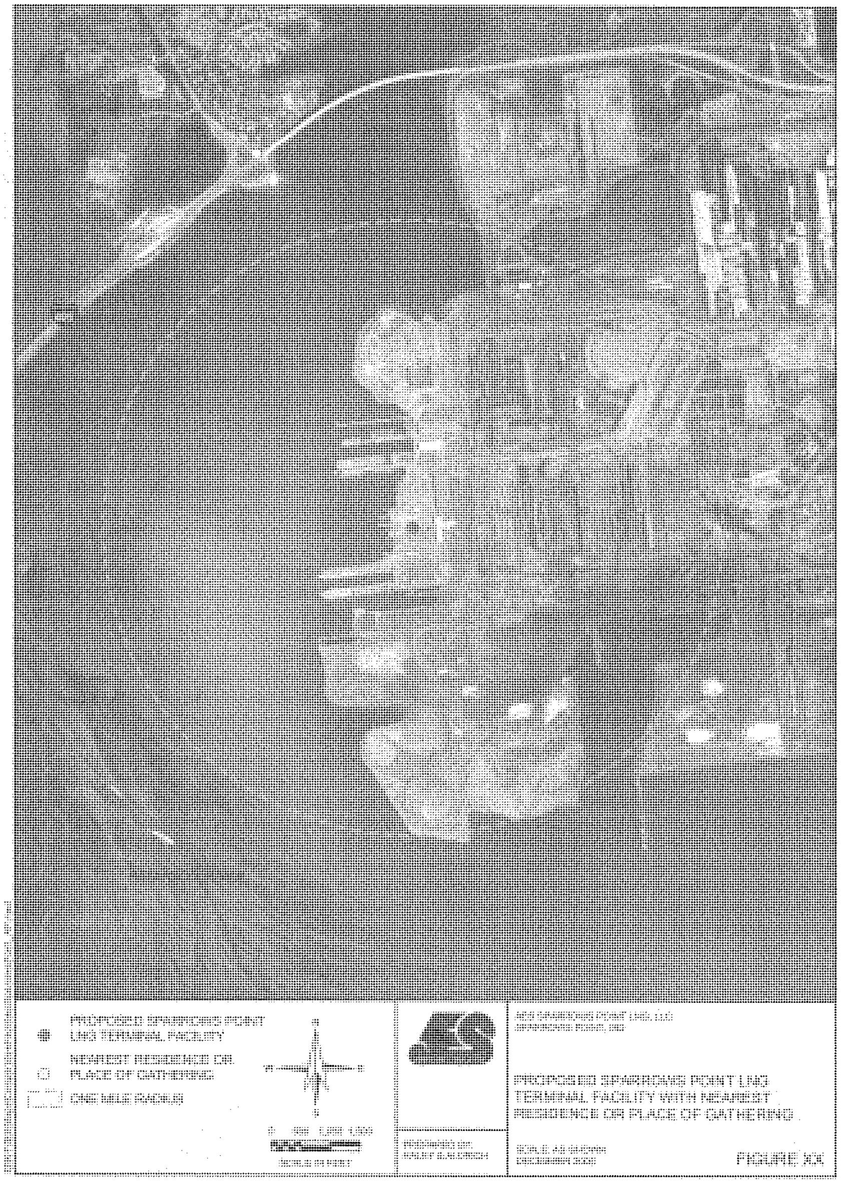
DECEMBER
FIGURE XX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PREPARED BY:
HALEY & ALDRICH
SCALE AS SHOWN
DECEMBER
FIGURE XX

GOOD HARBOR
CONSULTING, LLC

AES SPARROWS POINT: A RISK ASSESSMENT

Richard A. Clarke, Principal Investigator
January 31, 2007

The AES Corporation retained Good Harbor Consulting, LLC, to conduct a risk assessment of the proposed Sparrows Point liquefied natural gas (LNG) terminal using the same methodology employed in our reviews of other LNG projects. The conclusions articulated in this memorandum are taken from the full assessment, which will be released in the coming weeks.

Methodology

Good Harbor's risk management assessment methodology focuses on the potential security risk by examining THREAT, VULNERABILITY and CONSEQUENCE.

> THREAT is defined as a function of intent and capability. "Intent" is defined as the extent to which terrorist groups have expressed interest in attacking a particular type of target or whether their strategic objectives would be served by such attacks, and "capability" is defined as the extent to which terrorist groups have or could easily obtain the means necessary to conduct a significant attack against a class of facilities.
>
> VULNERABILITY is defined as the extent to which a class of infrastructure has inherent weaknesses to certain vectors of attack, with and without mitigation efforts, which can be exploited to generate consequences.
>
> CONSEQUENCE is defined as the range of damage from an attack on a certain class of infrastructure and to what extent surrounding communities have the capability to respond adequately to such circumstances; what the costs would be of creating missing capabilities, and on whom the financial burden would be placed.
>
> Good Harbor's analysis utilized the safety guidelines for LNG tankers articulated in the Sandia National Laboratories' 2004 report, "Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water."

Key Judgments

Employing this methodology, Good Harbor concludes that Sparrows Point represents an unlikely terrorist target. A successful attack on an LNG vessel in transit to or berthed at the facility would be difficult and would yield few fatalities, minimal damage to other key facilities, and limited socio-economic disruption. The proposed facility would be located in an industrial zone, away from commercial or residential areas. The location provides an inherently safer alternative than proposals in major population centers. There are more attractive targets which would be much easier to attack and which would, unlike Sparrows Point, produce mass casualties and significant disruption.

In the definitive government study on the risks of LNG spills over water, the Sandia National Laboratory team divided the areas through which LNG tankers transit into three numbered zones. For intentional spills, Zone 1 facilities are in areas within 500 meters of major infrastructure, population, and commercial centers. Zone 2 facilities are in areas with major infrastructure, population, and commercial centers between 500 meters and 1600 meters. Zone 3 facilities are in areas greater than 1600 meters from major infrastructure, population, and commercial centers. The proposed Sparrows Point terminal would be a Zone 3 facility, the lowest risk level. In comparison to the existing terminal in Everett, Massachusetts, which Good Harbor has previously advocated be closed, the Sparrows Point proposal is inherently safer. Its location in an industrial area is far different than the mixed-use commercial and residential area within the hazard zones of the Everett facility. This also holds true in comparison to the 2004 proposal for an LNG facility in Providence, Rhode Island, that was denied FERC permitting largely on the basis of an analysis conducted by Good Harbor.

Net Assessment

In short, security concerns should not be a bar to approval of the project. Because the vulnerabilities of an LNG tanker bound for or berthed at the proposed Sparrows Point terminal are difficult to exploit and possible to protect, and because the consequences of an attack on a vessel are relatively low, we judge it unlikely that terrorists would find the terminal to be an attractive target. The planning required, the training necessary, and the weapons capability needed suggest that an LNG tanker is only an attractive target if the consequences in terms of human loss and property damage are high. Though terrorist groups possess the necessary capabilities to attack an LNG carrier, the proposed location of the Sparrows Point facility in an industrial area prevents a successful attack from fulfilling their intent to kill large numbers of Americans and destroy iconic structures. They would therefore likely not attempt such an attack and apply their capabilities to more spectacular and lethal targets.

Recommended Security Measures

There are serious risks attendant with any flammable product, and these extend to the AES' proposal to bring LNG to Sparrows Point. These risks can be effectively managed for the proposed project. Facilities such as LNG terminals should be constructed with security as an embedded feature, not imposed post-construction as an afterthought. AES should consider security of the facility as their responsibility, not just that of the U.S. Coast Guard, the Department of Homeland Security or local law enforcement. While the decision to pursue the project in a remote location represents a significant investment in security, additional measures that should be taken include, but are not limited to: construction of a security barrier around the berth; posting armed security personnel at all times; installing LNG release detection systems; equipping Turner Station with a loudspeaker system and preparing emergency procedures; installing swimmer detection systems; and deploying smart CCTV cameras around the berth.

About Good Harbor

Good Harbor Consulting, LLC provides security consulting services for a broad range of clients—including Fortune 500 companies, industry associations, systems integrators, and innovative technology start-ups—in the fast-developing areas of homeland security, cyber security, critical infrastructure protection and counterterrorism.

Baltimore **AFL - CIO**
Building and Construction Trades Council

5913 Harford Road • Baltimore, Maryland 21214
410-426-9415
Fax: 410-426-9438

J. P. "Buddy" Cefalu
Vice President

Roderick "Rod" Easter
President

Charles Driscoll
Secretary Treasurer

April 20, 2007

The Honorable Elijah E. Cummings, Chairman
Subcommittee on Coast Guard and Maritime Transportation
Committee on Transportation and Infrastructure
U.S. House of Representatives
Room 507 Ford House Office Building
Washington, DC 20515

Re: Hearing on Safety and Security of Liquefied Natural Gas and the Impact on Port Operations in Baltimore – April 23, 2007

Dear Congressman Cummings:

I am writing on behalf of the Baltimore and Building Construction Trades Council, which represents 17,000 members in the Maryland area to comment on the subject of your April 23, 2007 hearing. We appreciate and share your concern for the safety and security of the people you represent and for the well-being of the environment and the Port of Baltimore. We have followed closely the proposal by AES Corporation to build and operate an LNG facility in the Outer Harbor of Baltimore, and believe we are qualified to speak on that project from both a general and union-specific point of view.

On January 8, 2007, AES submitted applications to FERC and other federal and state agencies that consisted of many thousands of pages. The application materials showed that the project could be built and operated without significant impact to the environment or the Port of Baltimore. In many ways, the project would actually improve the environment by bring more clean-burning natural gas to Maryland, by removing contaminated sediments from the Chesapeake Bay and recycling those materials into useful products, by decreasing the amount of water run-off from a large part of the Sparrows Point industrial complex, and by putting back to productive use a Brownfield site. It also would not have any impact on the big ships using the Port. Any impact to smaller boats on the Bay would be very minor.

AES also addressed the safety issue in its filings. The distance of the proposed site from population areas means that no one will be harmed should any significant event occur. This remote siting was also pointed to by Richard Clarke, a security and counter-terrorism expert, when he studied the potential for terrorism by saying the project represents an unlikely terrorist target due to its distance from commercial and residential areas. He categorized the location as being in the lowest risk level zone, and concluded that any risk associated with the project can be effectively managed. We also see that the independent risk assessment performed by the State of Maryland and included in the State's Advisory Report to FERC concluded that the level of risk posed by the project for employees at the adjacent steel mill, which is much closer than the 1.3 miles that the project is to the nearest residential area, was acceptable. Finally, because the project would be built with union labor, we know that only the highest standards of care and professionalism will be used in the project's construction. This will further ensure that the facility is safe.

With safety and environmental concerns addressed, we next looked at the economic benefits that the project would bring to local labor and area businesses. AES has committed to use union labor for the project that would add up to almost 4 million man-hours of work. We consider that to be very important to our members. AES has also shown other significant economic benefits to the local economy, including marine operations that would result from both the construction and operation of the project.

We ask that you take these comments into consideration both before and after the hearing.

Sincerely,

Rod Easter

Rod Easter
President, Baltimore Building and Construction Trades Council

RE:bjd

Dredging is economic necessity and environmental gain

On the waterfront

by Brooks Royster
executive director
Maryland Port Administration
www.mpa.state.md.us

Dredging is the lifeblood of the Helen Delich Bentley Port of Baltimore. It is an issue that continually must be addressed for the port to continue its present momentum and success.

To maintain the flow of commerce in the Chesapeake Bay and Baltimore Harbor, we must continually dredge shipping channels in these waterways to allow the maritime exchange essential to Maryland's economy. Billions of dollars are generated every year by port activities that have economic impacts on not only the local communities, but the state of Maryland and this nation as well.

While many people may be familiar with the business advantages of dredging, not as many are familiar with the environmental benefits.

Dredging is not a new concept. As early as 1836, the federal government took part in removing runoff sediment that entered into Baltimore Harbor. By 1958, the harbor depth had reached 42 feet and in 1989 the U.S. Army Corps of Engineers recommended that a depth of 50 feet was essential for maritime activity. The question was what to do with the material brought up from the bottom of the harbor and Chesapeake Bay.

The answer was to find locations that had seen erosion because of natural elements and begin the process of rebuilding that land. The Maryland Port Administration (MPA) has done just that, by reconstructing Hart-Miller Island and Poplar Island.

The initial construction of Hart-Miller began in 1981. When the project closes at the end of 2009, 100 million cubic yards of dredged material will have been placed on the island.

This dredged material has helped remake the 1,140-acre Hart-Miller Island into a recreational locale for boaters with a wildlife preserve and habitat that makes it home to many different types of waterfowl and other avian and aquatic species.

Poplar Island, as it exists, can continue to receive dredged material until about 2014. At that time, it will be complete with 570 acres of inter-tidal wetlands and another 570 acres of upland habitat. Last year the National Association of Environmental Professionals presented to the MPA and its partners, the Army Corp of Engineers Baltimore District and EA Engineering Science and Technology, one of only six national excellence awards for Poplar.

To continue accommodating the increasingly large shipping vessels, we must continue our dredging program.

Last year the Port of Baltimore welcomed the MSC Tokyo, the largest container ship in our port's history. The ship was equipped to handle 5,600 containers but could not visit our port fully loaded; while we had a 50-foot main navigation channel, we did not have the 50 feet of water at berth necessary for that ship.

More and more shipping lines are looking to take their business to ports that have deep waters. Through our dredging program, we can deepen the berths and terminal access channels for these large ships, and therefore open up our port to bigger ships with larger amounts of cargo. That means more business for the Port of Baltimore and our state.

> **More and more shipping lines are looking to take their business to ports that have deep waters.**

We are looking to use dredged material on other projects as well. We will expand our Masonville Terminal by using up to 18 million cubic yards of dredged material that will provide more opportunities for terminal activities. The project will also create wildlife habitats and a recreation area. The expansion will utilize dredged material to create a new 50-foot berth and access channel for the Seagirt Marine Terminal.

Along with the Army Corp of Engineers, we will submit a $1.1 billion proposal to Congress that will allow us to reclaim more eroding islands in the Chesapeake Bay. It will help protect parts of the Dorchester County shore from wind- and wave-induced erosion and flooding and free up waterways by relocating tens of millions of cubic yards of dredged material.

Dredged material projects are vital in many ways. Working with communities that are informed about our dredging needs and their economic and environmental importance to Maryland will lead to projects benefiting everyone for generations to come.

Public education regarding dredging is a major component for success. In 2002, an outreach program, MPA's Harbor Team, was created to solicit input from individuals and community organizations representing the two counties, Baltimore and Anne Arundel, and Baltimore City that are impacted by harbor dredging projects.

The result of that outreach program came in the form of recommendations to the MPA for the proposed Masonville project. In 2004, the MPA Harbor Team project was presented with the American Association of Port Authorities award for Community/Public Involvement.

Community education and involvement by the MPA also includes outreach to area schools. It is said that the children are our future, and the future of our port depends on those who know its importance and its place in their daily lives. We strongly believe that an aware young person today will later be the keeper of our great maritime heritage.

The projects in the past and those planned for the future will take time, money and, most importantly, collaboration between our elected officials, involved agencies and Maryland communities. The more informed everyone is about the many benefits of dredging, the more quality dredging projects we can continue to create to benefit our state for many years.

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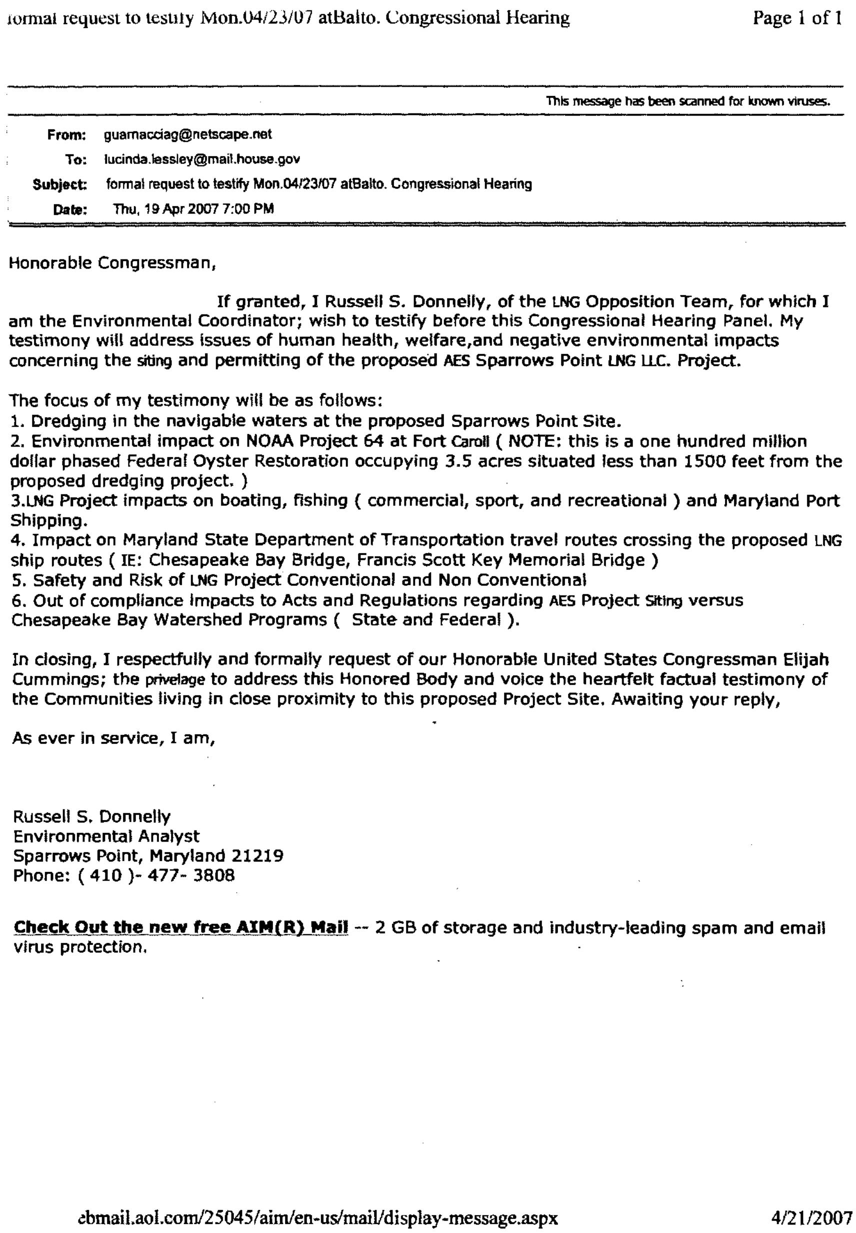

ıormal request to testıy Mon.04/23/07 atBalto. Congressional Hearing Page 1 of 1

This message has been scanned for known viruses.

From: guarnacciag@netscape.net
To: lucinda.lessley@mail.house.gov
Subject: formal request to testify Mon.04/23/07 atBalto. Congressional Hearing
Date: Thu, 19 Apr 2007 7:00 PM

Honorable Congressman,

If granted, I Russell S. Donnelly, of the LNG Opposition Team, for which I am the Environmental Coordinator; wish to testify before this Congressional Hearing Panel. My testimony will address issues of human health, welfare,and negative environmental impacts concerning the siting and permitting of the proposed AES Sparrows Point LNG LLC. Project.

The focus of my testimony will be as follows:
1. Dredging in the navigable waters at the proposed Sparrows Point Site.
2. Environmental impact on NOAA Project 64 at Fort Caroll (NOTE: this is a one hundred million dollar phased Federal Oyster Restoration occupying 3.5 acres situated less than 1500 feet from the proposed dredging project.)
3.LNG Project impacts on boating, fishing (commercial, sport, and recreational) and Maryland Port Shipping.
4. Impact on Maryland State Department of Transportation travel routes crossing the proposed LNG ship routes (IE: Chesapeake Bay Bridge, Francis Scott Key Memorial Bridge)
5. Safety and Risk of LNG Project Conventional and Non Conventional
6. Out of compliance Impacts to Acts and Regulations regarding AES Project Siting versus Chesapeake Bay Watershed Programs (State and Federal).

In closing, I respectfully and formally request of our Honorable United States Congressman Elijah Cummings; the privelage to address this Honored Body and voice the heartfelt factual testimony of the Communities living in close proximity to this proposed Project Site. Awaiting your reply,

As ever in service, I am,

Russell S. Donnelly
Environmental Analyst
Sparrows Point, Maryland 21219
Phone: (410)- 477- 3808

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February 13, 2007

Magalie R. Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Re: Docket No. CP07-62, Docket No. CP07-63,
Docket No. CP07-64, Docket No. CP07-65
AES Sparrows Point LNG, LLC and
Mid-Atlantic Express, LLC
Application for Authorization to Site,
Construct and Operate a Liquefied
Natural Gas Terminal and Pipeline

Comments of the LNG Opposition Team Requesting Denial of Permit of AES Sparrows Point LNG, LLC and Mid-Atlantic Express, LLC

Dear Secretary Salas and Honored Commissioners:

These comments are submitted on behalf of the LNG Opposition Team, which represents the citizens of Dundalk, Edgemere, Turners Station, and others in areas surrounding Sparrows Point.

The LNG Opposition Team adamantly opposes the proposed LNG import terminal at Sparrows Point proposed by AES Corporation.

AES Corporation has proposed a project that would:
(a) be an environmental disaster,
(b) present serious geotechnical problems in terms of construction and exposure to possible earthquakes;
(c) present unsafe conditions to nearby workers and residents of surrounding communities, and be an inviting target for terrorists;
(d) injure the fishing and recreational boating industry;
(e) thwart the aspirations of surrounding residents for environmental justice; and
(f) be wildly out of compliance with the acts and regulations regarding the Chesapeake Bay Watershed Programs, and inconsistent with the Coastal Zone Management Act.

AES Sparrows Point LNG, LLC and Mid-Atlantic Express, LLC have presented a project which shows little or no consideration for the beauty, health, and welfare of three great states (Maryland, Pennsylvania and Virginia). During the course of this Federal Energy Regulatory Commission (FERC) process AES has submitted as supposed "factual" data information that is misleading and erroneous, particularly with regard to environmental and safety aspects of the proposed project..

Members of the LNG Opposition Team, including Russell S. Donnelly, Hope Janicki and Guido Guarnaccia, have attended at least 90 % of all AES meetings, hearings, and other proceedings related to this project since January, 2006. The experience of the LNG Opposition Team in the environmental area is substantial. Russell Donnelly is an active environmental analyst with 30 years field experience in Maryland, and members of the Team combine findings based on over 100 years of combined experience in dealing with environmental issues. We have endeavored to present information that is factual and not based on emotions, despite the fact that our communities have been dumped on for over 100 years. We are within the zone of interests the law seeks to protect, and we have established our standing in pending judicial proceedings related to this proposed project. We are impacted by the industrial emissions, water quality and land use within our Critical Area Watershed.

Our personal interest in this project is to PROTECT, BY WHATEVER MEANS NECESSARY, THE CHESAPEAKE BAY WATERSHED, THE PEOPLE, THE VOICELESS LIVING ORGANISMS, THE LAND, THE WATER, AND THE AIR. The AES Project is presented in total disregard of the impacts and damage this project will inflict on the environment and everything and everyone in it.

We have outlined in the following documentation reasons WHY AES SHOULD BE DENIED Site Permits for the AES Sparrows Point LNG, LLC and Mid-Atlantic Express, LLC:

Attachments:

1. Dredging
2. Geo Technical/Geo Physical
3. Environmental Impact of Pipeline Corridor
   (Mid-Atlantic Express, LLC)
4. Safety and Risk of LNG Project Conventional
   And Non Conventional
5. LNG Project Impacts on Boating, Fishing (Commercial,
   Sport and Recreational) and Maryland Port Shipping

6. Impacts on Population, Socio-Economics and Environmental Justice

7. Out of Compliance Impacts to Acts and Regulations Regarding AES Project Siting versus Chesapeake Bay Watershed Programs (State and Federal)

In summary, the entire AES project (Facility and Pipeline) does not offer sufficient benefits to Maryland, Pennsylvania or Virginia to offset the environmental and socio-economic impacts rendered by installation of the proposed project. The Chespeake Bay is registered as one of the Forty United States National Treasures. WE as citizens seek to protect, revitalize and enhance this treasure. Thus, for all the benefit of our people and all the countless lives which would be injured as a result of this unnecessary project, we most adamantly implore and strongly suggest that the FERC Commissioners DENY this Permit applied for by AES Sparrows Point LNG, LLC and Mid-Atlantic Express, LLC.

The voice of all the people and political representatives of our State in both Maryland and Pennsylvania have clearly registered a vote of NO CONFIDENCE in regard to both proposed AES Projects (Docket Nos: CP07-62,
CP07-63, CP07-64 and CP07-65)

By permitting the AES Projects the health, safety and quality of life of our people, and future generations, and the entire Chesapeake Bay Watershed will be placed at risk.

We respectfully request that the Honored Commissioners of the Federal Energy Regulatory Commission respect and honor our collective wish -

NO PERMIT FOR MARYLAND AND PENNSYLVANIA !

Respectfully Submitted:

Bart S. Fisher
Counsel
LNG Opposition Team

Sharon Beazley
Team Coordinator
LNG Opposition Team

Russell S. Donnelly
Environmental Analyst
LNG Opposition Team

Hope Janicki
Technical Researcher
LNG Opposition Team

Leonard R. Nadwodny
Technical Engineering Specialist
LNG Opposition Team

Guido Guarnaccia
Safety and Homeland Security
LNG Opposition Team

Linwood Jackson
Hazardous Materials Manager
LNG Opposition Team

Greater Dundalk Alliance (GDA)
Carolyn Jones
President

Wells-McComas Improvement Association
Fred Thiess
President

Eastfield-Stanbrook
Karen Cruz
President

Turners Station DC
Dunbar Brooks
President

1. DREDGING IMPACTS:

* History at Sparrows Point

* Damages

* List of Species

* SETAC Abstract

* RCRA Corrective Action Environmental Indicator (EI)
RCRIS Code (CA 725) 2 pages

* Region 3 Environmental Protection Agency (EPA)
GPRA Baseline Corrective Action Facility

* Center for Disease Control - Atlanta Georgia
Department of Health and Human Services
Agency for Toxic Substances and Disease Registry
(ATSDR 2005 Comprehensive Environmental Response,
Compensation and Liability Act of 1980, 42 USC 9605
(CERCLA) Priority List of Hazardous Substances

** NOTE: All items with a Check ( ) Are Found at Sparrows Point Peninsula **

* Maryland Department of Transportation (MDOT) and Maryland
Port Administration (MPA) Memorandum October 2006
Bulk Sediment Analysis

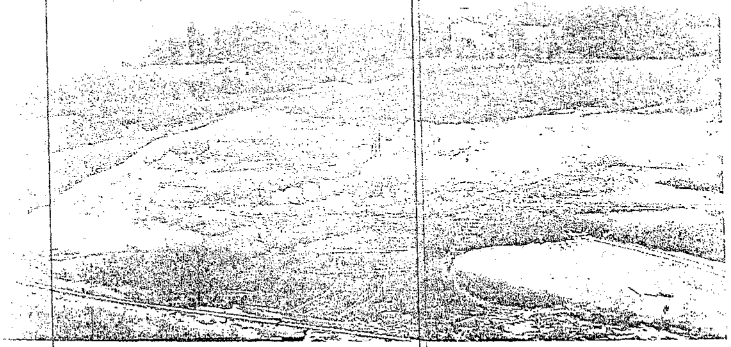
** NOTE: A Full Comprehensive ASTM Analysis (By the Foot, By the Core in a 2 Square Meter Grid Pattern) Would Render a Far more definitive result than the lesser Composite Analysis given. **

* Maryland Department of the Environment (MDE)
Water Quality Status Near Sparrows Point:
Toxic Contaminants

MR. AND MRS. WILLIAM FITZELL

LAST OWNERS of private grounds on Sparrows Point previous to the present possession by the Bethlehem Steel Co. were Mr. and Mrs. William Fitzell. They were the uncle and aunt of William B. Foulke who now lives in the Shaw house.

Former Owners Of Sparrows Point



FITZELL'S FARM & PEACH-ORCHARD SPARROWS POINT MD. 1883.

THE BEST EXCURSION POINT, AND ALSO

ONE OF THE BEST FARMS

In Baltimore County, State of Maryland,

FOR THE GROWTH OF

FRUIT TREES, GRAIN, VEGETABLES, &c., &c.

FOR SALE,

KNOWN more commonly as "SPARROW'S POINT FARM," or "Sprigg's Point Resurveyed," on the north side of the Patapsco River, just opposite the new Fort (Carroll), seven miles by water and thirteen by land, over a fine level road from the City of Baltimore, affording freight and traveling facilities to Baltimore by water and land, or to Philadelphia through the Chesapeake and Delaware Canal. The Farm contains 577 ACRES OF LAND, upwards of 400 of which are in cultivation, and are highly improved and productive; the rest is woodland, consisting of valuable WOOD and TIMBER, and affording with the river shores extensive pasturage for a large farm stock of all kinds. The arable land is subdivided into five fields and three large lots under good and substantial post and rail, post and cap fencing, viz.:—One field of about 80 acres is well set in CLOVER and TIMOTHY; another field of about 80 acres, in OATS; two fields, respectively, of 65 and 50 acres, are in WHEAT; and the other field next the woods in CORN. One lot of 30 acres, is finely set in TIMOTHY; the other two lots, one 20 and the other 23 acres, are planted with CORN—the larger of the two contains a young and thriving PEACH AND APPLE ORCHARD AND CHOICE PEAR TREES. The land is a deep, dark loamy soil, with a fine clay sub-soil along the whole river front of about 200 acres, very highly improved, and the best kind of soil for the growth of the PEACH, APPLE, PEAR and all kinds of FRUIT TREES, VEGETABLES, &c. In the interior, the soil is stiffer, and best adapted for the growth of WHEAT, CORN, TOBACCO, &c., all kinds of GRAIN and HAY. Herd grass is the spontaneous or indigenous growth of the soil, even in the woodland. It has always produced fine crops, and this season they are very promising—equal to any in the State.

The entire Farm (except for about 400 yards), is surrounded by deep water, navigable to within from 80 to 300 yards of the shores, only requiring cross fencing. The shores are hard and clean, and afford a water line of about five miles; the Patapsco River is on the north and west, and the bay roads on the south and east; North Point to the east, and the Bodkin Point to the south, and just between them the Chesapeake Bay in full view, affording every luxury of the water in their season, viz.: CRABS, FISH, OYSTERS, DUCKS and WILD FOWL of all kinds. The GARDEN is well supplied with FIGS, APRICOTS, CHERRIES, PLUMS and STRAWBERRIES, RASPBERRIES, GOOSEBERRIES, CURRANTS, and all kinds of VEGETABLES, FLOWERS, SHRUBBERY, &c., &c.

The soil and climate are admirably suited for the cultivation and perpetuity of fruit trees of all kinds, and garden and other early vegetables, bearing at least three weeks earlier than on the other side of the river.

For quality of soil, beauty of location, and above all, for large resources for the highest improvement, it is unsurpassed. Oyster shell banks and sea ores all along the shores abound in quantities more than sufficient, annually, to cover all the cleared land with oyster shell lime, and the sea ores.

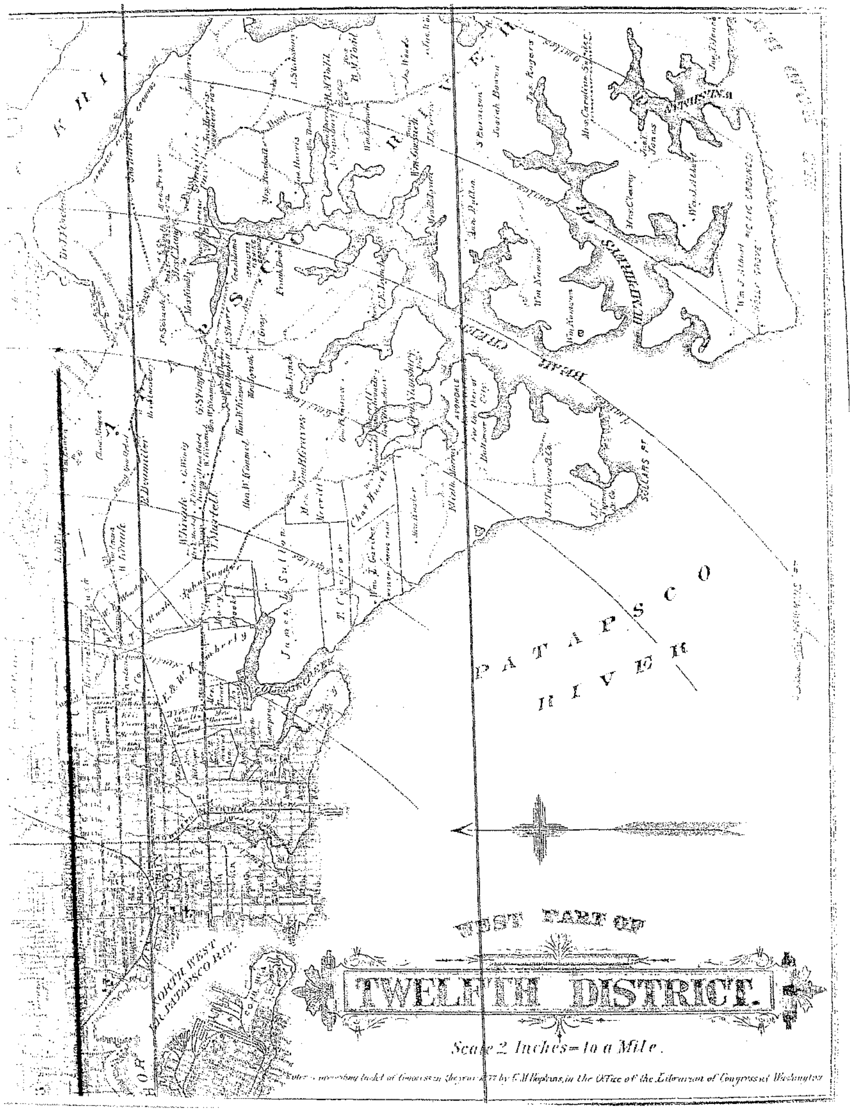
The buildings consist of TWO BRICK and TWO FRAME DWELLINGS, with the necessary barns, stables, and other outbuildings, which were erected at a cost of about $19,000, and are in good order. The large brick dwelling is isolated, not necessary for farm purposes, commands an unobstructed view of the river and bay, and would be desirable for a club. First rate harbor for yachts of any size.

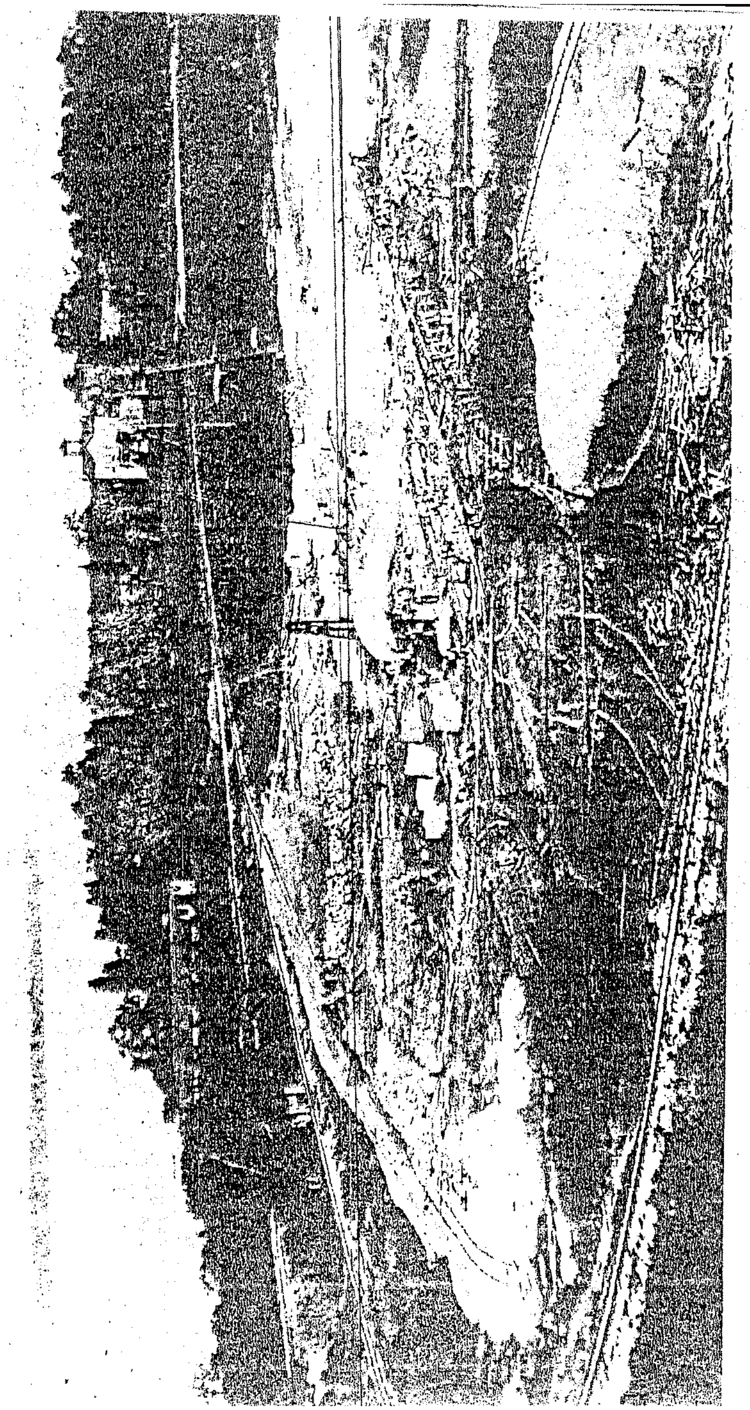
Holly Grove or Tivoli is too well known to need description; it is situated eleven miles from Light St. Wharf, has an area of 150 acres, is densely shaded, and has no rival as an excursion point within fifty miles of Baltimore. The improvements at Tivoli cost over $20,000 to erect, are substantial and in good order,—must be seen to be appreciated. Experience, good management and energy are alone necessary to make this grove exceedingly valuable. Boats for Tivoli, from pier 5, Light Street, daily according to advertisements.

This property occupies the same relative position with regard to Baltimore that Coney Island does to New York.

Considered simply as a farm, it is greatly superior to the average of water side estates on the Eastern and Western Shores of Maryland, with the advantage of being within two hours' drive of the city.

FOR SALE BY


WEST PART OF
TWELFTH DISTRICT.
Scale 2 Inches = to a Mile.
Entered according to Act of Congress in the year 1877 by G.M. Hopkins, in the Office of the Librarian of Congress at Washington
PATAPSCO RIVER
NORTH WEST BR. PATAPSCO RIV.
COLGATE'S CREEK



FITZELL'S FARM & PEACH-ORCHARD SPARROWS POINT MD. 1893

In 1893, Bethlehem Steel Corporation created the Peninsula by landfilling a wetland and landfilling the Humphries Creek. They began mass production which spanned over one hundred years. During this period, an annual average of three million pounds of toxic pollutants (I.E. : carcinogens, heritable mutagens, developmental toxins, reproductive toxins, acute toxins, chronic toxins, and neurotoxins) were released into the air, soil, sediment, water, and groundwater creating a “ toxic parfait “. This polluting progressed unchecked until approximately 1980.

During the decade 1980 thru 1990, environmental programs were designed and implemented to identify, address, control, and subdue this highly toxic situation.A multi-governmental task force studied the Baltimore Harbor/ Patapsco River Basin. A plan was developed to intensively dredge out as much toxic sediment as was humanly possible and feasible at one time. After which, only periodic maintenance dredging was to occur in the main channels and Port spur channels.

After consideration of the collected data, two sites in the Baltimore Harbor/ Patapsco River Basin were designated Comrehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9605 (CERCLIS) sites by EPA (1988/ 1996).
The first site was Allied Chemical Co. at Baltimore Harbor. This site was not dredged due to its highly toxic nature. The site was declared Superfund, due in fact that the business was closed. The site was encapsulated in an eight foot thick concrete berm, installed in the water surrounding the contaminated area. Next, a six foot thick concrete cap was poured overtop this site.Today,almost twenty years later, buildings are being built on this site.
(note: the toxins remain “ too high priority toxic “ to remove.)

The second site was Sparrows Point Shipyard Turning Basin. This site was the most toxic contaminated of the entire Baltimore Harbor/ Patapsco River Basin, containing in excess of 172 toxic pollutant constituants. The site was Archived in CERCLIS and transferred to Resource Conservation and Recovery Act (RCRA) 1976 / RCRA Information System due to the fact it was a business still in operation, employing approximately25,000 workers. The task force could have closed this facility. Instead, after consideration, the decision was made to maintain the operation and dredge only 400,000 cubic yards.

In 1988, the EPA imposed a dredge cap limit on this site: “ no further intensive dredging at the Sparrows Point Site (note: no intensive dredging has occurred at this site since then. Also no analysis or testing occurred again at this site until 2004 and 2006). Before 2004, the last chemical and physical core sediment analysis was performed at the Sparrows Point Shipyard by E.A. Engineering, Science and Technology Inc. in 1985. The results designated the Sparrows Point Site highly toxic/ high priority, extremely hot, to the five foot depth level in the sediment. Translated into current science language, there exists at this site an overall “ 30 % concentration of NAPL to the five foot sediment depth, high priority toxic”. The reason for the five foot depth determination was that the task force was not planning to dredge any deeper.

The Chesapeake Bay is already registered as “ severely impared “. Another environmental impact of the magnitude implied resulting from the proposed dredge project at Sparrows Point would most likely be irreversible in its effect on the Chesapeake Bay Region. The resultant release of toxins from the sediment to the water would regenerate the pathway of the decline, and ultimately, the demise of the entire benthic community life, the aquatic community life, and also impact human life in the region.

The physical environmental impact is one more aspect to be considered. The Chesapeake Bay contains a growing number of " dead zones ". This dredging project would remove more sediment (up to 7.2 million cubic yards) from one finite area, than was originally removed from the entire Baltimore Harbor/ Patapsco River Basin primary dredge (6.18 million cubic yards). This removal would cause highly noticeable changes in the geophysical nature of the surrounding area. This dredging project would create the largest single " dead zone " in the entire region.

If dredging is allowed and permitted another serious concern is the manner of removal and disposal for the dredge spoils. There are two dredge projects proposed at this site; one by BWI, Inc.(3.2 mcy) and one by AES Consortium (4 mcy). Both dredge projects must be considered, since both occupy the same footprint.

Upon review, many questions and concerns pertaining to this project need clarification. The issues are clearly apparent in Draft Resource Report 3- Vegetation and Wildlife. The course of action, by choice seems to be clambucket / barge dredging for sediment removal, and onsite upland storage and processing for disposal. Considering the source of the dredge spoils, the applicants proposed methodology needs to be scrutinized much more closely in regard to imminent environmental impact repercussions resulting from these intended project actions.

Next, the project in its entirety is not clearly defined (I.E.: volume quantities, equipment dimensions, site specifications, etc.). What should be presented as a uniform project blueprint appears instead as a constantly changing description. This raises strong questions and concerns as to the true nature, scope, and ultimate intent of this project. In order to render a reccomendation, the project needs to be more clearly defined and illustrated.

Next, the study data presented for the environmental assessment requirement as per FERC guidelines (chemical, physical, water quality, fish study, benthic study, plankton study, and SAV study), for the entire project, were sampled and completed during the thirty days of June 2006. This is very impressive. However, upon conferring with referenced scientific experts in all fields concerned with these types of studies, it was concluded and agreed that the results presented in this Draft Resource Report 3- Vegetation and Wildlife represent a " snapshot " study view. Furthermore, it was recommended that these results do not fully investigate or delineate a comprehensive estimate for site specific parameters. A large portion of the data presented is referenced material and site substitution, instead of true site specific study data which is required under FERC guidelines. Throughout the report, no clear and comprehensive environmental impact issues are designated. In point of fact, results for environmental impact of the magnitude implied resulting from the proposed dredge project at Sparrows Point would most likely be irreversible in its effect on the Chesapeake Bay Region. The resultant release of toxins from the sediment to the water would regenerate the pathway of the decline, and ultimately, the demise of the entire benthic community life, the aquatic community life, and also impact human life in the region.

The physical environmental impact is one more aspect to be considered. The Chesapeake Bay contains a growing number of " dead zones ". This dredging project would remove more sediment (up to 7.2 million cubic yards) from one finite area, than was originally removed from the entire Baltimore Harbor/ Patapsco River Basin primary dredge (6.18 million cubic yards). This removal would cause highly noticeable changes in the geophysical nature of the surrounding area. This dredging project would create the largest single " dead zone " in the entire region.

If dredging is allowed and permitted another serious concern is the manner of removal and disposal for the dredge spoils. There are two dredge projects proposed at this site; one by BWI, Inc.(3.2 mcy) and one by AES Consortium (4 mcy). Both dredge projects must be considered, since both occupy the same footprint.

Upon review, many questions and concerns pertaining to this project need clarification. The issues are clearly apparent in Draft Resource Report 3- Vegetation and Wildlife. The course of action, by choice seems to be clambucket / barge dredging for sediment removal, and onsite upland storage and processing for disposal. Considering the source of the dredge spoils, the applicants proposed methodology needs to be scrutinized much more closely in regard to imminent environmental impact repercussions resulting from these intended project actions.

Next, the project in its entirety is not clearly defined (I.E.: volume quantities, equipment dimensions, site specifications, etc.). What should be presented as a uniform project blueprint appears instead as a constantly changing description. This raises strong questions and concerns as to the true nature, scope, and ultimate intent of this project. In order to render a reccomendation, the project needs to be more clearly defined and illustrated.

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Next, based on the Report, the applicant concludes and enters statements such as :

1. The State of Maryland has no Fish Classification System.
2. That fish do not breed in the Sparrows Point terminal site area, they only migrate to and from the area.
3. That no SAV are present in the Terminal Site area.
4. ETC.

These assumptions are misleading based on relavant comments from registered experts on or about October 23 thru October 31, 2006. Overall there is a need for more intensive site specific study for the entire project (Maryland, Pennsylvania, Virginia).

Lastly, thirty solid years of effort by a great number of conscientious citizens, officials, and agencies have been invested to revitalize the Chesapeake Bay and the Chesapeake Bay Watershed covering five States. Please note that as a matter of historic record, the Bear Creek, Patapsco River and Old Road Bay were almost devoid of aquatic living organisms for roughly fifteen years. As of five years ago, life started to reemerge in these tributaries. Marked increase in aquatic populations have been registered and recorded during the last two years of study. It has cost thirty years of hard work to regain and yield the revitalization which is present today in a positive asset gain. One wrong decision could undo and reverse all our efforts.

In conclusion, it is inconceivable to view all given areas and aspects of this project and assume that there will be no major impacts to our lands, waters, and the living inhabitants residing therein. What the Federal Energy Regulatory Commission recommends will affect the immediate future and all future generations for better or for worse. Therefore, I would like to suggest to this Body that the applicant be compelled to conduct a site specific ,full and comprehensive biodiversity study, a site specific, full and comprehensive bioassay for the entire project area. Further, that all project sitings be selected before any permitting or certifications are granted.

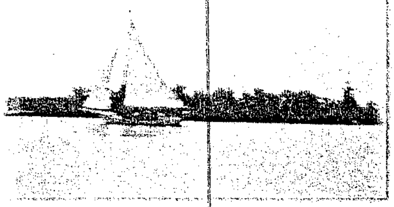
Damages which will occur if dredging continues:

1. Turbidity will exceed allowable limits
2. Oxygen levels will be depressed
3. Toxic pollutants will reenter the water column
4. Benthic community will be impacted
5. SAV growth will be terminated
6. Aquatic life will be subjected to toxic health effect
7. All beneficial environmental revitalization gains over the last five years in this area, will be lost. I.E.: Return of fish to breed

    Crustaceans
    Clams
    Sensitive Species
    Water Bird Colonies will be disturbed (Fort Caroll, Southwest Tip of Sparrows Point Shipyard)

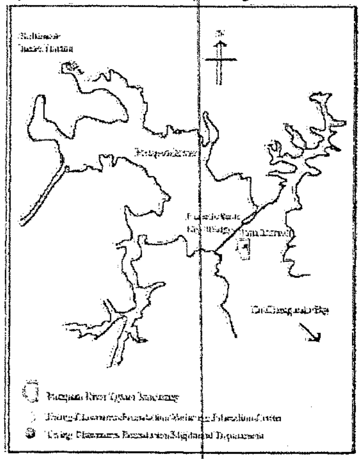
8. Aquatic staging areas
9. Concentration areas for waterfowl
10. NOAA Project 64- Living classrooms oyster restoration project (100 million dollars phased funding) begun five years ago will be irreparably terminated if two or more inches of sediment covers the oysters at Fort Caroll
11. Release of Toxins from sediment pose an immediate acute and chronic human health hazard for anyone coming in contact with the water, and , more specifically, the workers who contact the sediment.

The Patapsco River Oyster Sanctuary: Fort Carroll Oyster Restoration Project



Introduction

In 1995, the Department of Natural Resources succeeded in designating a protected Oyster Sanctuary near Fort Carroll in the Patapsco River. Currently, the site is part of an Oyster Restoration Project designed to improve and increase the number of oysters at this location. As an oyster sanctuary, this site is off limits to oyster fishermen, and may be used for long term study of the oyster population there. The area is of particular interest for several reasons: it has traditionally been relatively free of the diseases devastating the Chesapeake Bay's oysters, there are no other protected restoration sites in the Patapsco River, and there is little research available on Patapsco River oysters. The Oyster Round Table, a statewide panel of experts, agrees that restoration energy should be spent north of the Bay Bridge in areas like the Patapsco River.



Student Involvement

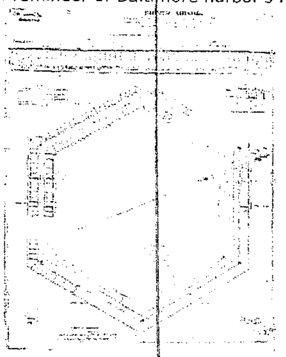
Since 1995, students participating in the Living Classrooms Oyster Reef Restoration Project have been helping to restore this northern oyster bed through Living Classroom's shipboard department. Students participating in extended summer and fall programs onboard the historic oystering skipjack, *Sigsbee*, have become invested in the project by contributing to every phase of restoration: charting the bed, bagging and depositing shell, cultivating oyster larvae in the Horn Point labs, planting over 590,000 seed oysters, assessing associated organisms, and monitoring the oyster population's size, growth, and mortality.

During shipboard day programs, students dredge for oysters at the Fort Carroll site and assist crew with collecting data pertinent to the health of the oyster bed by examining oyster spat and other animals inhabiting the oyster bed community. This is the central part of the *Sigsbee* curriculum, which also explores water quality parameters such as dissolved oxygen, salinity, and temperature at the Fort Carroll site. Students make important connections across disciplines, which are quintessential to understanding the challenges faced with revitalization of the oyster habitat within the Chesapeake Bay.

In our continuing effort to educate students about the importance of oysters in the Chesapeake Bay, students of the Weinberg Education Center are now a part of the Restoration project as well. Living Classrooms Foundation's staff and students are expanding our knowledge about the overall health of the Patapsco River oysters by testing for Dermo, one of the two parasites which are depleting the oyster population throughout the Chesapeake Bay. In 1999, Living Classrooms began quarterly Dermo testing of the Patapsco River bed along with concurrent water quality testing. The results show that although the Patapsco River Sanctuary oysters do have Dermo, the infection is a light one.

History of Fort Carroll

The Patapsco River Oyster Sanctuary surrounds the 3.4 acre manmade island on Sollars Point Flats known as Fort Carroll. This hexagonal fort was designed to protect the Baltimore Harbor from naval attack in the mid 1800's. Work on the fort was begun in 1847 and ended in 1900, but the project was never completed. Not only was the fort difficult to build because the manmade island was constantly settling, but there was also a lack of funding. In addition, naval armament improvements during the many years necessary to build the fort rendered it obsolete. Today, the fort is privately owned. Many ideas have been proposed for the fort's use: a restaurant sustained by slot machines, an outdoor education center, an anchorage for the U.S.S. *Constellation*, a marina, a tunnel connecting with Fort McHenry, a museum for relics of the Civil and Revolutionary War, and a summer theater. Regardless of the final decision for the future use of Fort Carroll, she will always remain a strong visual reminder of Baltimore harbor's rich military history.



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Essential Fish Habitat
Including but, not limited to: Eggs, Larvae, Junior and Adult Species

- Alewife
- Blueback Herring
- American Shad
- White Perch
- Yellow Perch
- American Eel
- Striped Bass
- Bluefish
- Summer Flounder
- Winter Flounder
- Spot
- Atlantic Croaker
- Blue Crab
- King Mackerel
- Spanish Mackerel
- Cobia
- Red Drum
- Windowpane Flounder
- Bullhead Minnow
- Grass Shrimp
- Bay Anchovy
- Atlantic Menhaden
- Gizzard Shad
- Spottail Shiner
- Oysters - Fort Carroll NOAA #64
- Soft Shell Clams
- Hard Shell Clams
- Mussells
- Crayfish
- Water Snake

Federal Endangered Species List:

Loggerhead Turtles 3000 - 10000 per year
Kemps Ridley Turtle 500 per year
Green Sea Turtle

Leatherback Turtle
Snapping Turtles
Box Turtles
Maryland Terrapin Turtle

*** Data from the Maryland Department of Natural Resources (DNR) Sea Turtle Tagging Program and Data From the Sea Turtle Stranding and Salvage Network indicates that Sea Turtles do occur near the Mouth of the Patapsco River. ****

Shortnose Sturgeon 4 Captured near the Mouth of the Patapsco River
Atlantic Sturgeon
North Atlantic Right Whale
Hump Back Whale
Fin Whale

*** Rare Visitors to the Chesapeake Bay - 3 Documented Ship Strike Related Deaths in the Chesapeake Bay since 2001. ***

**** Sturgeon and Sea Turtles are vulnerable to entrainment in Hopper Dredges typically resulting in injury and death. ****

Endangered Species - All Sub-Aquatic Vegetation - 14 Species

Sensitive Species:

Plankton - Note: Turbidity increase produced by Dredging will block sunlight and subsequently will inhibit growth.

Avian Water Colonies Located at: Fort Carroll
Southwest Tip Sparrows Point

Water Dependent Avian Species:

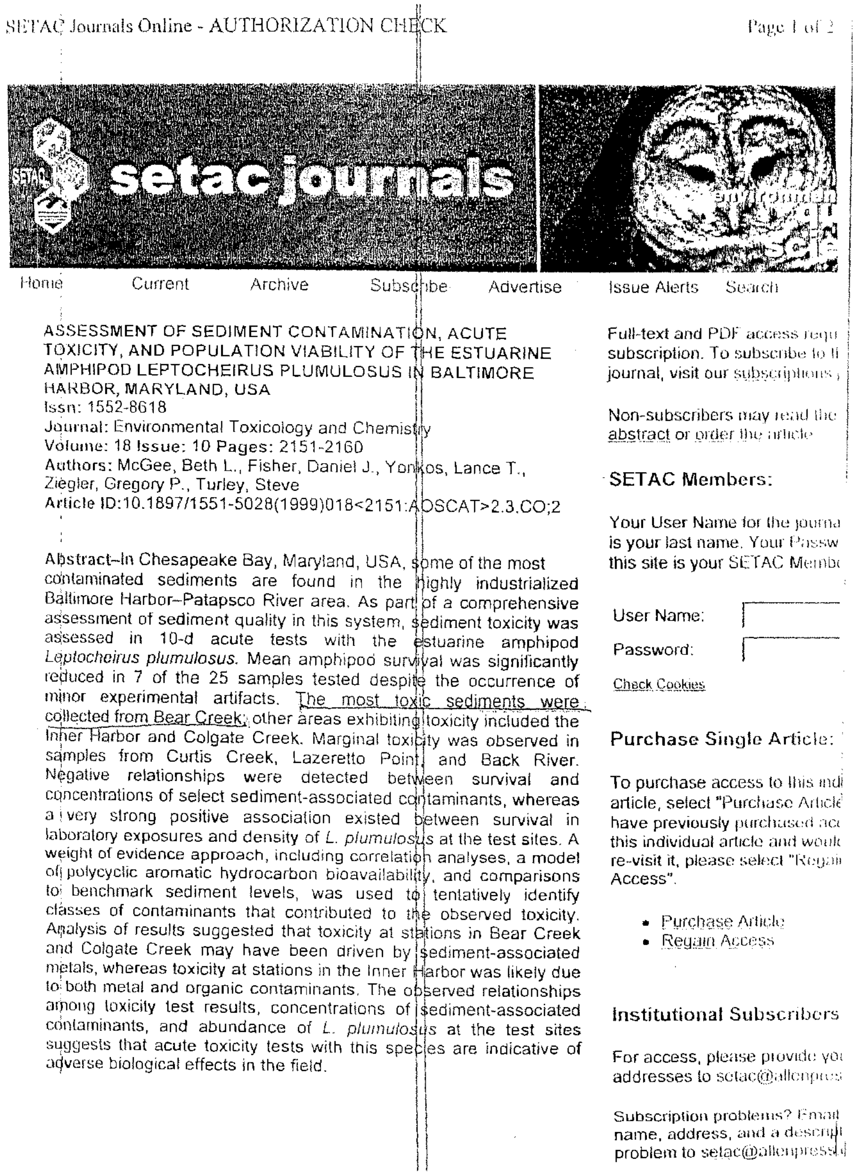
Ospreys
American Bald Eagle (Endangered Species)
Peregrine Falcon
Sparrow Hawk
Redtail Hawk
Goshawk

Blacktip Gulls
Terns
Sea Gulls
Black Rail
Baltimore Oriole
Sandpiper
Blue Jay
Cardinal
Redwing Blackbird
Grossbeaks
Finches
Sparrows
Chickadees
Woodpecker
Flickers
Kingfishers (Small)
Mockingbirds
Starlings
Egrets
Herons (Gray, Great Blue, White)
Cranes
American Crow
Raven
White Breasted Nuthatch
Pigeons
Quail
Morning Doves
Great Horned Owl
Screech Owl
Barn Owl

ETC................

Sensitive Mammals:

Red Fox
Silver Fox
Grey Fox
Muskrat



SETAC Journals Online - AUTHORIZATION CHECK

Page 1 of 2

ASSESSMENT OF SEDIMENT CONTAMINATION, ACUTE TOXICITY, AND POPULATION VIABILITY OF THE ESTUARINE AMPHIPOD LEPTOCHEIRUS PLUMULOSUS IN BALTIMORE HARBOR, MARYLAND, USA

Issn: 1552-8618
Journal: Environmental Toxicology and Chemistry
Volume: 18 Issue: 10 Pages: 2151-2160
Authors: McGee, Beth L., Fisher, Daniel J., Yonkos, Lance T., Ziegler, Gregory P., Turley, Steve
Article ID:10.1897/1551-5028(1999)018<2151:AOSCAT>2.3.CO;2

Abstract–In Chesapeake Bay, Maryland, USA, some of the most contaminated sediments are found in the highly industrialized Baltimore Harbor–Patapsco River area. As part of a comprehensive assessment of sediment quality in this system, sediment toxicity was assessed in 10-d acute tests with the estuarine amphipod *Leptocheirus plumulosus.* Mean amphipod survival was significantly reduced in 7 of the 25 samples tested despite the occurrence of minor experimental artifacts. The most toxic sediments were collected from Bear Creek; other areas exhibiting toxicity included the Inner Harbor and Colgate Creek. Marginal toxicity was observed in samples from Curtis Creek, Lazeretto Point, and Back River. Negative relationships were detected between survival and concentrations of select sediment-associated contaminants, whereas a very strong positive association existed between survival in laboratory exposures and density of *L. plumulosus* at the test sites. A weight of evidence approach, including correlation analyses, a model of polycyclic aromatic hydrocarbon bioavailability, and comparisons to benchmark sediment levels, was used to tentatively identify classes of contaminants that contributed to the observed toxicity. Analysis of results suggested that toxicity at stations in Bear Creek and Colgate Creek may have been driven by sediment-associated metals, whereas toxicity at stations in the Inner Harbor was likely due to both metal and organic contaminants. The observed relationships among toxicity test results, concentrations of sediment-associated contaminants, and abundance of *L. plumulosus* at the test sites suggests that acute toxicity tests with this species are indicative of adverse biological effects in the field.

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Current Human Exposures Under Control

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "**contaminated**"[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater	X			See discussion, below.
Air (indoors)[2]		X		See discussion, below.
Surface Soil (e.g., <2 ft)	X			See discussion, below.
Surface Water	X			See discussion, below.
Sediment	X			See discussion, below.
Subsurf. Soil (e.g., >2ft)	X			See discussion, below.
Air (outdoors)		X		See discussion, below.

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

_X_ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

GROUNDWATER: Deep groundwater (Patuxent Aquifer below the Arundel Clay) is confirmed to not be contaminated based on sampling and analysis.

---

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Current Human Exposures Under Control

Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No		No			
Air (indoors)							
Surface Soil (e.g., <2 ft)	No	Yes		No	No		
Surface Water	Yes	No			No	Yes	Yes
Sediment	No	No			No	No	Yes
Subsurf. Soil (e.g., >2ft)	No			No			
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media--Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

____ If no (pathways are not complete for any contaminated media-receptor combination) -skip to #6, and enter "YE" status code, after explaining and/or

---

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

REGION 3 GPRA Baseline RCRA Correction Action Facility

INTERNATIONAL STEEL GROUP (former Bethlehem Steel)

SPARROWS POINT - MARYLAND

KNOWN CONTAMINANTS AT SITE:

ANTIMONY

ARSENIC

CADMIUM

CHROMIUM

COPPER

IRON

LEAD

MANGANESE

NICKEL

TIN

ZINC

AMMONIA

BENZENE

CYANIDE

ETHYL BENZENE

ETHYLENE GLYCOL

HYDROGEN CYANIDE

HYDROGEN SULFIDE

NAPHTHALENE

PAHs

REGION 3 GPRA Baseline RCRA Correction Action Facility

INTERNATIONAL STEEL GROUP (former Bethlehem Steel)

SPARROWS POINT - MARYLAND

CONTINUED:

PCBs

PENTACHLOROPHENOL

PHENOLS

PYRENE

SODIUM PHENOLATE

STYRENE

SULFURIC ACID

TOLUENE

TRICHLOROETHYLENE

XYLENE

COAL TAR

OILS

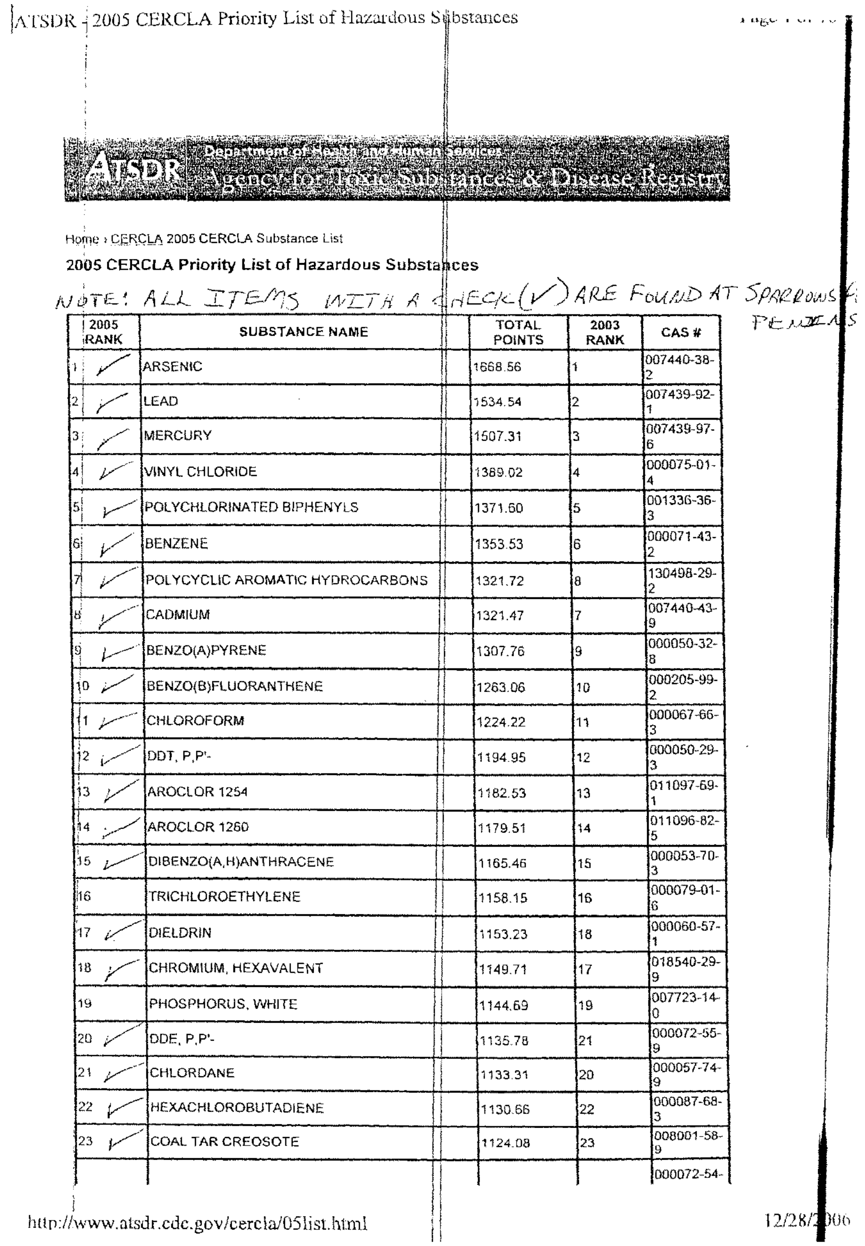
LIME SLUDGE

WASTE ALKALINE RINSES

MILL SCALE

SHIPYARD WASTES

ETC......



ATSDR - 2005 CERCLA Priority List of Hazardous Substances

Page 1 of [illegible]

ATSDR Department of Health and Human Services Agency for Toxic Substances & Disease Registry

Home › CERCLA 2005 CERCLA Substance List

2005 CERCLA Priority List of Hazardous Substances

NOTE: ALL ITEMS WITH A CHECK (✓) ARE FOUND AT SPARROWS PENINS

2005 RANK	SUBSTANCE NAME	TOTAL POINTS	2003 RANK	CAS #
1 ✓	ARSENIC	1668.56	1	007440-38-2
2 ✓	LEAD	1534.54	2	007439-92-1
3 ✓	MERCURY	1507.31	3	007439-97-6
4 ✓	VINYL CHLORIDE	1389.02	4	000075-01-4
5 ✓	POLYCHLORINATED BIPHENYLS	1371.60	5	001336-36-3
6 ✓	BENZENE	1353.53	6	000071-43-2
7 ✓	POLYCYCLIC AROMATIC HYDROCARBONS	1321.72	8	130498-29-2
8 ✓	CADMIUM	1321.47	7	007440-43-9
9 ✓	BENZO(A)PYRENE	1307.76	9	000050-32-8
10 ✓	BENZO(B)FLUORANTHENE	1263.06	10	000205-99-2
11 ✓	CHLOROFORM	1224.22	11	000067-66-3
12 ✓	DDT, P,P'-	1194.95	12	000050-29-3
13 ✓	AROCLOR 1254	1182.53	13	011097-69-1
14 ✓	AROCLOR 1260	1179.51	14	011096-82-5
15 ✓	DIBENZO(A,H)ANTHRACENE	1165.46	15	000053-70-3
16	TRICHLOROETHYLENE	1158.15	16	000079-01-6
17 ✓	DIELDRIN	1153.23	18	000060-57-1
18 ✓	CHROMIUM, HEXAVALENT	1149.71	17	018540-29-9
19	PHOSPHORUS, WHITE	1144.69	19	007723-14-0
20 ✓	DDE, P,P'-	1135.78	21	000072-55-9
21 ✓	CHLORDANE	1133.31	20	000057-74-9
22 ✓	HEXACHLOROBUTADIENE	1130.66	22	000087-68-3
23 ✓	COAL TAR CREOSOTE	1124.08	23	008001-58-9
				000072-54-

http://www.atsdr.cdc.gov/cercla/05list.html

12/28/2006

24	✓	DDD, P,P'-	1121.42	24	8
25	✓	ALDRIN	1116.94	26	000309-00-2
26	✓	BENZIDINE	1114.05	25	000092-87-5
27	✓	AROCLOR 1248	1112.19	27	012672-29-6
28	✓	CYANIDE	1098.75	28	000057-12-5
29	✓	AROCLOR 1242	1092.87	29	053469-21-9
30	✓	TOXAPHENE	1086.23	31	008001-35-2
31		TETRACHLOROETHYLENE	1084.88	30	000127-18-4
32		HEXACHLOROCYCLOHEXANE, GAMMA-	1080.42	32	000058-89-9
33		HEPTACHLOR	1070.76	33	000076-44-8
34		1,2-DIBROMOETHANE	1064.58	34	000106-93-4
35		DISULFOTON	1058.74	36	000298-04-4
36	✓	ACROLEIN	1057.72	71	000107-02-8
37		HEXACHLOROCYCLOHEXANE, BETA-	1056.45	37	000319-85-7
38	✓	BENZO(A)ANTHRACENE	1055.63	35	000056-55-3
39	✓	3,3'-DICHLOROBENZIDINE	1051.33	53	000091-94-1
40	✓	BERYLLIUM	1046.48	38	007440-41-7
41	✓	ENDRIN	1040.88	39	000072-20-8
42		HEXACHLOROCYCLOHEXANE, DELTA-	1038.14	40	000319-86-8
43		1,2-DIBROMO-3-CHLOROPROPANE	1035.87	41	000096-12-8
44	✓	HEPTACHLOR EPOXIDE	1028.26	44	001024-57-3
45	✓	PENTACHLOROPHENOL	1024.41	42	000087-86-5
46	✓	CARBON TETRACHLORIDE	1022.74	43	000056-23-5
47	✓	AROCLOR 1221	1018.20	45	011104-28-2
48	✓	AROCLOR 1016	1014.83	46	012674-11-2
49	✓	DDT, O,P'-	1014.65	47	000789-02-6
50		COBALT	1013.95	49	007440-48-4
51	✓	CIS-CHLORDANE	1010.94	50	005103-71-9
52	✓	DI-N-BUTYL PHTHALATE	1005.41	48	000084-74-2
53	✓	ENDOSULFAN SULFATE	1004.89	52	001031-07-8
54	✓	ENDOSULFAN	1004.26	54	000115-29-7
55	✓	NICKEL	1003.95	51	007440-02-0

56	✓	TRANS-CHLORDANE	1002.36	55	005103-74-2
57		DIAZINON	1001.89	114	000333-41-5
58	✓	ENDOSULFAN, ALPHA	1000.76	57	000959-98-8
59		XYLENES, TOTAL	995.32	56	001330-20-7
60		DIBROMOCHLOROPROPANE	994.75	58	067708-83-2
61	✓	METHOXYCHLOR	993.32	59	000072-43-5
62	✓	AROCLOR	991.52	60	012767-79-2
63	✓	BENZO(K)FLUORANTHENE	980.61	61	000207-08-9
64	✓	ENDRIN KETONE	978.86	62	053494-70-5
65	✓	ENDOSULFAN, BETA	976.59	63	033213-65-9
66	✓	CHROMIUM(VI) OXIDE	969.43	64	001333-82-0
67		METHANE	959.56	65	000074-82-8
68	✓	AROCLOR 1232	955.38	67	011141-16-5
69	✓	ENDRIN ALDEHYDE	954.50	66	007421-93-4
70		BENZOFLUORANTHENE	951.23	69	056832-73-6
71	✓	TOLUENE	946.04	68	000108-88-3
72		2-HEXANONE	940.85	70	000591-78-6
73		2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	937.04	72	001746-01-6
74	✓	ZINC	930.42	73	007440-66-6
75		DIMETHYLARSINIC ACID	921.93	74	000075-60-5
76	✓	DI(2-ETHYLHEXYL)PHTHALATE	918.60	75	000117-81-7
77	✓	CHROMIUM	905.03	76	007440-47-3
78	✓	NAPHTHALENE	895.49	78	000091-20-3
79	✓	1,1-DICHLOROETHENE	894.91	77	000075-35-4
80	✓	AROCLOR 1240	888.03	81	071328-89-7
81	✓	METHYLENE CHLORIDE	886.69	80	000075-09-2
82		2,4,6-TRINITROTOLUENE	879.06	82	000118-96-7
83		BROMODICHLOROETHANE	869.91	86	000683-53-4
84	✓	1,2-DICHLOROETHANE	865.60	87	000107-06-2
85		HYDRAZINE	864.30	88	000302-01-2
86	✓	2,4,6-TRICHLOROPHENOL	863.10	83	000088-06-2
					000051-28-

56	✓	TRANS-CHLORDANE	1002.36	55	005103-74-2
57		DIAZINON	1001.89	114	000333-41-5
58	✓	ENDOSULFAN, ALPHA	1000.76	57	000959-98-8
59		XYLENES, TOTAL	995.32	56	001330-20-7
60		DIBROMOCHLOROPROPANE	994.75	58	067708-83-2
61	✓	METHOXYCHLOR	993.32	59	000072-43-5
62	✓	AROCLOR	991.52	60	012767-79-2
63	✓	BENZO(K)FLUORANTHENE	980.61	61	000207-08-9
64	✓	ENDRIN KETONE	978.86	62	053494-70-5
65	✓	ENDOSULFAN, BETA	976.59	63	033213-65-9
66	✓	CHROMIUM(VI) OXIDE	969.43	64	001333-82-0
67		METHANE	959.56	65	000074-82-8
68	✓	AROCLOR 1232	955.38	67	011141-16-5
69	✓	ENDRIN ALDEHYDE	954.50	66	007421-93-4
70		BENZOFLUORANTHENE	951.23	69	056832-73-6
71	✓	TOLUENE	946.04	68	000108-88-3
72		2-HEXANONE	940.85	70	000591-78-6
73		2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	937.04	72	001746-01-6
74	✓	ZINC	930.42	73	007440-66-6
75		DIMETHYLARSINIC ACID	921.93	74	000075-60-5
76	✓	DI(2-ETHYLHEXYL)PHTHALATE	918.60	75	000117-81-7
77	✓	CHROMIUM	905.03	76	007440-47-3
78	✓	NAPHTHALENE	895.49	78	000091-20-3
79	✓	1,1-DICHLOROETHENE	894.91	77	000075-35-4
80	✓	AROCLOR 1240	888.03	81	071328-89-7
81	✓	METHYLENE CHLORIDE	886.69	80	000075-09-2
82		2,4,6-TRINITROTOLUENE	879.06	82	000118-96-7
83		BROMODICHLOROETHANE	869.91	86	000683-53-4
84	✓	1,2-DICHLOROETHANE	865.60	87	000107-06-2
85		HYDRAZINE	864.30	88	000302-01-2
86	✓	2,4,6-TRICHLOROPHENOL	863.10	83	000088-06-2
					000051-28-

87	✓	2,4-DINITROPHENOL	860.43	85	5
88	✓	BIS(2-CHLOROETHYL) ETHER	858.19	89	000111-44-4
89		THIOCYANATE	849.12	90	000302-04-5
90	✓	ASBESTOS	842.16	92	001332-21-4
91		CYCLOTRIMETHYLENETRINITRAMINE (RDX)	840.72	93	000121-82-4
92		CHLORINE	840.04	94	007782-50-5
93	✓	HEXACHLOROBENZENE	838.26	91	000118-74-1
94		RADIUM-226	835.89	98	013982-63-3
95	✓	1,1,1-TRICHLOROETHANE	835.27	95	000071-55-6
96	✓	2,4-DINITROTOLUENE	834.71	96	000121-14-2
97		ETHION	833.95	100	000563-12-2
98		URANIUM	833.16	97	007440-61-1
99	✓	ETHYLBENZENE	830.62	99	000100-41-4
100		RADIUM	827.97	101	007440-14-4
101		THORIUM	825.03	102	007440-29-1
102		4,6-DINITRO-O-CRESOL	822.35	103	000534-52-1
103		1,3,5-TRINITROBENZENE	819.11	106	000099-35-4
104		RADON	818.41	104	010043-92-2
105	✓	CHLOROBENZENE	817.28	108	000108-90-7
106		RADIUM-228	816.58	107	015262-20-1
107		URANIUM-235	814.60	112	015117-96-1
107		THORIUM-230	814.60	109	014269-63-7
109		BARIUM	812.12	110	007440-39-3
110		URANIUM-234	812.01	113	013966-29-5
111	✓	N-NITROSODI-N-PROPYLAMINE	811.01	111	000621-64-7
112		THORIUM-228	810.30	116	014274-82-9
113	✓	FLUORANTHENE	810.29	115	000206-44-0
114		RADON-222	810.23	117	014859-67-7
115		MANGANESE	808.16	131	007439-96-5
116		HEXACHLOROCYCLOHEXANE, ALPHA-	807.72	118	000319-84-6
117	✓	COAL TARS	807.03	124	008007-45-2
118		PLUTONIUM-239	806.68	122	015117-48-3

119	STRONTIUM-90	806.62	120	010098-97-2
119	CHRYSOTILE ASBESTOS	806.62	125	012001-29-5
121	METHYLMERCURY	806.47	119	022967-92-6
122	POLONIUM-210	806.34	120	013981-52-7
123	PLUTONIUM-238	805.93	123	013981-16-3
124	LEAD-210	805.86	126	014255-04-0
125	PLUTONIUM	805.19	128	007440-07-5
125	CHLORPYRIFOS	805.19	127	002921-88-2
127	RADON-220	804.56	129	022481-48-7
128	AMERICIUM-241	804.50	130	086954-36-1
129	AMOSITE ASBESTOS	804.02	176	012172-73-5
130	IODINE-131	803.48	132	010043-66-0
131 ✓	TRIBUTYLTIN	803.07	132	000688-73-3
132	HYDROGEN CYANIDE	803.03	134	000074-90-8
133	COPPER	802.60	141	007440-50-8
134	GUTHION	802.32	135	000086-50-0
135	NEPTUNIUM-237	802.11	136	013994-20-2
136	CHLORDECONE	801.63	137	000143-50-0
136	IODINE-129	801.63	137	015046-84-1
136	PLUTONIUM-240	801.63	137	014119-33-6
139 ✓	CHRYSENE	799.59	140	000218-01-9
140	S,S,S-TRIBUTYL PHOSPHOROTRITHIOATE	797.81	142	000078-48-8
141	POLYBROMINATED BIPHENYLS	789.01	144	067774-32-7
142	BROMINE	789.01	143	007726-95-6
143 ✓	1,2,3-TRICHLOROBENZENE	787.73	151	000087-61-6
144	DICOFOL	787.52	145	000115-32-2
145	PARATHION	784.02	146	000056-38-2
146 ✓	1,1,2,2-TETRACHLOROETHANE	778.29	148	000079-34-5
147	SELENIUM	777.65	147	007782-49-2
148	HEXACHLOROCYCLOHEXANE, TECHNICAL GRADE	774.60	149	000608-73-1
149	TRICHLOROFLUOROETHANE	770.66	152	027154-33-2
				001582-09-

150	TRIFLURALIN	770.06	153	8
151	DDD, O,P'-	768.62	154	000053-19-0
152	4,4'-METHYLENEBIS(2-CHLOROANILINE)	766.59	155	000101-14-4
153	HEXACHLORODIBENZO-P-DIOXIN	760.07	156	034465-46-8
154	HEPTACHLORODIBENZO-P-DIOXIN	754.08	157	037871-00-4
155	PENTACHLOROBENZENE	753.47	158	000608-93-5
156	AMMONIA	744.67	161	007664-41-7
157	2-METHYLNAPHTHALENE	743.90	159	000091-57-6
158	1,1-DICHLOROETHANE	737.82	162	000075-34-3
159	1,4-DICHLOROBENZENE	735.51	164	000106-46-7
160	ACENAPHTHENE	729.63	165	000083-32-9
161	1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN	725.79	167	039001-02-0
162 ✓	1,1,2-TRICHLOROETHANE	722.98	163	000079-00-5
163	TRICHLOROETHANE	722.85	166	025323-89-1
164 ✓	HEXACHLOROCYCLOPENTADIENE	718.71	168	000077-47-4
165	HEPTACHLORODIBENZOFURAN	718.25	169	038998-75-3
166	1,2-DIPHENYLHYDRAZINE	713.70	170	000122-66-7
167	2,3,4,7,8-PENTACHLORODIBENZOFURAN	710.58	171	057117-31-4
168	TETRACHLOROBIPHENYL	709.14	172	026914-33-0
169	CRESOL, PARA-	706.23	173	000106-44-5
170	OXYCHLORDANE	706.21	174	027304-13-8
171 ✓	1,2-DICHLOROBENZENE	703.53	182	000095-50-1
172	GAMMA-CHLORDENE	702.55	84	056641-38-4
173	TETRACHLOROPHENOL	702.38	181	025167-83-3
174	CARBON DISULFIDE	702.31	177	000075-15-0
175	URANIUM-233	701.59	246	013968-55-3
175	AMERICIUM	701.59	178	007440-35-9
177	PALLADIUM	700.60	185	007440-05-3
178	1,2-DICHLOROETHENE, TRANS-	700.56	175	000156-60-5
179	HEXACHLORODIBENZOFURAN	700.27	184	055684-94-1
180	INDENO(1,2,3-CD)PYRENE	698.45	183	000193-39-5
181	ACETONE	693.31	187	000067-64-1

244	CALCIUM ARSENATE	601.43	246	007778-44-1
244	MERCURIC CHLORIDE	601.43	246	007487-94-7
247	FORMALDEHYDE	599.22	251	000050-00-0
248	2-CHLOROPHENOL	598.90	219	000095-57-8
249	PHENANTHRENE	595.25	249	000085-01-8
250	HYDROGEN FLUORIDE	587.88	253	007664-39-3
251	2,4-D ACID	584.13	252	000094-75-7
252 ✓	DIBROMOCHLOROMETHANE	580.41	255	000124-48-1
253	DIURON	579.09	NEW	000330-54-1
254	BUTYLATE	578.36	257	002008-41-5
255	DIMETHYL FORMAMIDE	578.04	258	000068-12-2
256 ✓	PYRENE	575.34	259	000129-00-0
257	ETHYL ETHER	572.10	261	000060-29-7
258 ✓	DICHLOROETHANE	570.47	262	001300-21-6
259	4-NITROPHENOL	565.05	263	000100-02-7
260	PHOSPHINE	559.64	265	007803-51-2
261 ✓	TRICHLOROBENZENE	558.13	266	012002-48-1
262	2,6-DINITROTOLUENE	554.50	267	000606-20-2
263	FLUORIDE ION	549.16	269	016984-48-8
264	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	547.70	270	035822-46-9
265	METHYL PARATHION	545.71	271	000298-00-0
266	PENTAERYTHRITOL TETRANITRATE	545.49	NEW	000078-11-5
267	1,3-DICHLOROPROPENE, TRANS-	545.07	268	010061-02-6
268	BIS(2-ETHYLHEXYL)ADIPATE	540.08	273	000103-23-1
269	CARBAZOLE	535.41	272	000086-74-8
270 ✓	1,2-DICHLOROETHENE, CIS-	532.34	NEW	000156-59-2
271	METHYL ISOBUTYL KETONE	531.89	274	000108-10-1
272	STYRENE	531.08	275	000100-42-5
273	CARBARYL	530.91	NEW	000063-25-2
274	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	529.28	NEW	067562-39-4
275	ACRYLONITRILE	528.09	NEW	000107-13-1

Memorandum

Date: November 7, 2006

To: Frank Hamons, Dave Bibo

From: Jennifer Harlan

Reference: Bulk sediment analysis for BWI Sparrows Point Shipyard, October 2006 Sampling

Review of the bulk sediment analysis has been completed for the above referenced project. Severn Trent Laboratories analyzed 4 samples of sediment collected from the proposed dredging project in October 2006. The attached spreadsheet lists the results of each of the tested samples, presents the data in a table format, and allows comparison with several calculated averages and minimum and maximum concentrations for other sediments previously placed at Hart-Miller Island (HMI). Approximately 300,000 cubic yards of this material will be placed at HMI.

Findings:

Organics: Overall, thirty-four individual organics were detected in the four grab samples. Detected organic compounds per sample ranged from a high of thirty-two compounds to a low of seventeen compounds. Each of the organics detected and its concentration is listed on the attached spreadsheet; the majority of the detections were in the parts per billion (ppb) range. There were 5 detections of individual organics in one sample that were in the part per million (ppm) range; however, the concentrations were all less than 3 ppm.

Oil and grease (O&G) was not detected in 2 of the samples. One detected concentration of O&G was almost half of the inner harbor average concentration, while the other detected concentration was above the inner harbor average. The total solids (TS) percentages for three of the four samples were above the inner harbor average. The TS percentage for the remaining sample was lower than both the inner harbor and outer channel averages. The pH levels were slightly higher than both the inner harbor and outer channel averages, but remained below both the recorded maximums. The total organic carbon (TOC) levels for three of the four samples were below both the inner harbor and outer channel sediment averages. The TOC concentration for the remaining sample was below the inner harbor average.

Nutrients: Three of the four sediment grab samples had individual total Kjeldahl nitrogen (TKN) concentrations and total phosphorus (total P) concentrations below both the inner harbor and outer channel sediment averages. The remaining sample had TKN and total P concentrations that were higher than the inner harbor average.

Metals: Two of the BWI Sparrows Point Shipyard grab sediment samples contained at least 2 metal with concentrations over the respective inner harbor averages. Arsenic, copper, lead and zinc had at least one concentration over the inner harbor average, but all concentrations remained significantly below the inner harbor maximum concentrations. In the remaining two grab samples, all the metal concentrations were below inner harbor averages. Many of the metal concentrations were also below the outer channel averages.

Conclusions and Recommendations:

There were 34 priority pollutant organics detected in the four grab samples, but the majority of the concentrations were in the parts per billion range and are not expected to have an impact on water quality. Since the majority of the O&G concentrations were lower than the outer channel averages, the formation of oil slicks is not expected. TOC levels were lower than the average for inner harbor sediments.

Nutrient levels (TKN and total P) varied in comparison to inner harbor and outer channel sediment. TKN and total P levels in three of the four samples averaged lower then both the inner harbor and outer channel averages. The remaining sample had TKN and total P concentrations above the inner harbor averages. The majority of the individual metal concentrations were below the inner harbor averages, with many also being below the outer channel averages. While there were five individual metal concentrations above the inner harbor average, none of these concentrations were close to the maximums that have previously been recorded in material deposited in HMI.

Over all, the chemical analysis shows the material to be similar to inner harbor sediments that have been placed at HMI previously. With the estimated volume expected (300,000 cy), the material should not cause any major handling problems associated with the chemistry of the material if standard practices for material inflow and management are followed.

Please call me if there are any questions.

Attachment

cc: Nat Brown
Ron Perry/HMI Inspection Staff
Cassandra Carr
HMI COC

BULK SEDIMENT ANALYSIS

PROJECT NAME, SAMPLING DATE AND SAMPLE LOCATIONS	NUTRIENTS AND PHYSICAL PARAMETERS							METALS										
	TKN*	TOTAL P*	pH	O&G*	TOC*	COD*	TS*	ARSENIC	BARIUM	CADMIUM	CHROMIUM	COPPER	IRON	LEAD	MERCURY	SELENIUM	SILVER	ZINC
	MG/KG	MG/KG	UNITS	MG/KG	MG/KG	MG/KG	%	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
INNER HARBOR AVERAGE (1985-2005)	1981	1431	7.6	2632	38721	102124	45	25	84	3.0	328	153	32774	187	0.7	7.8	1.5	357
INNER HARBOR MAXIMUM (1985-2005)	15600	29600	8.8	70200	260000	579000	95	540	739	69	6300	1590	93100	1700	6.9	130	21	4300
INNER HARBOR MINIMUM (1985-2005)	41	0.08	4.1	0.1	0.2	18	17	0.3	0.4	0.01	0.01	0.02	2.28	0.05	0.01	0.02	0.01	0.04
OUTER CHANNEL AVERAGE (1985-1999)	1456	1230	7.6	867	24635	66236	39	7.2	56	1.4	50	33	29365	50	0.19	3.2	1.3	197
OUTER CHANNEL MAXIMUM (1985-1999)	5000	14917	8.5	5842	90500	390909	85	33	250	5.0	640	240	94000	464	2.1	12	7.7	580
OUTER CHANNEL MINIMUM (1985-1999)	40	14	6.1	1.0	176	117	18	0.5	4.9	0.1	1.9	0.5	1600.0	1.5	0.01	0.1	0.1	7.6
Sparrows Point Shipyard (October 2006)																		
SPSY-01	3100	1720	8.0	1250	27300		28	56.9		1.50	328 NE	201.0		180.0 E	0.30	6.2	1.5	670 E
Organics Detected (dry weight, ug/kg): 4,4'-DDD (9), 4,4'-DDE (8.7), 4,4'-DDT (7.9 PG), Aldrin (7 J), Apha-BHC (5 PG), Alpha-Chlordane (1.4 J PG), Dieldrin (0.78 J PG), Endosulfan II (10), Endrin (3.1 PG), Endrin Aldehyde (3.5 J PG), Endrin Ketone (2.3 J PG), Gamma-Chlordane (0.99 J PG), Bis (2-Ethylhexyl) Phthalate (440 J), Isophorone (140 J), Phenol (68 J), Methylene Chloride (1.1 J B), Acenaphthene (42 J), Acenaphthylene (110 J), Anthracene (200 J), Benzo(A)Anthracene (580 J), Benzo(A)Pyrene (620 J), Benzo(B)Fluoranthene (680 J), Benzo(GHI)Perylene (470 J), Benzo(K)Fluoranthene (260 J), Chrysene (620 J), Dibenz(A,H)Anthracene (110 J), Fluoranthene (940 J), Fluorene (65 J), Indeno(1,2,3-CD)Pyrene (500 J), Naphthalene (560 J), Phenanthrene (590 J), and Pyrene (830 J).																		
SPSY-02	232	255	8.0	270 U	6770		62	4.7		0.48 U	32 NE	13.0		17.8 E	0.04	0.4 B	0.2 B	58 E
Organics Detected (dry weight, ug/kg): 4,4'-DDT (1.4 J), Apha-BHC (0.96 J PG), Endosulfan II (1.1 J), Endrin (0.28 J PG), Endrin Aldehyde (0.68 J PG), Heptachlor (0.22 J PG), Isophorone (75 J), Phenol (55 J), Methylene Chloride (31 B), Benzo(A)Anthracene (40 J), Benzo(B)Fluoranthene (54 J), Benzo(GHI)Perylene (49 J), Benzo(K)Fluoranthene (23 J), Chrysene (35 J), Fluoranthene (65 J), Indeno(1,2,3-CD)Pyrene (33 J), Naphthalene (55 J), Phenanthrene (27 J), and Pyrene (64 J).																		
SPSY-03	1120	693	8.0	291 U	9820		57	5.1		0.48 U	32 NE	16.1		14.9 E	0.04	0.5 U	0.2 B	70 E
Organics Detected (dry weight, ug/kg): Apha-BHC (1.3 J PG), Endrin (0.24 J PG), Endrin Aldehyde (1.1 J PG), Heptachlor (0.19 J PG), Isophorone (68 J), Methylene Chloride (7.1 J B), Benzo(A)Anthracene (39 J), Benzo(A)Pyrene (46 J), Benzo(B)Fluoranthene (51 J), Benzo(GHI)Perylene (38 J), Benzo(K)Fluoranthene (21 J), Chrysene (35 J), Fluoranthene (64 J), Indeno(1,2,3-CD)Pyrene (42 J), Naphthalene (50 J), Phenanthrene (24 J), and Pyrene (56 J).																		
SPSY-04	1350	819	7.4	3330	17800		51	12.5		1.60	128 NE	129.0		203.0 E	0.32	1.2	0.8	380 E
Acenaphthylene (220 J), Anthracene (600 J), Benzo(A)Anthracene (1100), Benzo(A)Pyrene (950), Benzo(B)Fluoranthene (960), Benzo(GHI)Perylene (570 J), Benzo(K)Fluoranthene (370 J), Chrysene (1100), Dibenz(A,H)Anthracene (150 J), Fluoranthene (2600), Fluorene (400 J), Indeno(1,2,3-CD)Pyrene (730), Naphthalene (790), Phenanthrene (1600), and Pyrene (1500).																		

* Note the following abbreviations:
TKN = Total Kjeldahl Nitrogen
Total P = Total Phosphorus
O&G = Oil and Grease
TOC = Total Organic Carbon
COD = Chemical Oxygen Demand
TS = Total Solids
L = compound was analyzed but not detected
E= value is estimated because of presence of interference
B= compound was detected, but below reporting limit (estimated)
N=spiked sample recovery is not within control limits
K = Analyte detected in lab reagent blank
J (Inorganic) = Compound was detected in method blank

TABLE 1-8 VOLATILE CONCENTRATIONS (UG/KG) IN SEDIMENT
SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
1,1,1-TRICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1,2-TRICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1-DICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1-DICHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,2-DICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,2-DICHLOROPROPANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
2-CHLOROETHYL VINYL ETHER	UG/KG	22	36 U	16 U	17 U	19 U
ACROLEIN	UG/KG	220	360 U	160 U	170 U	190 U
ACRYLONITRILE	UG/KG	220	360 U	160 U	170 U	190 U
BENZENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
BROMODICHLOROMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
BROMOFORM	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
BROMOMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CARBON TETRACHLORIDE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROBENZENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROFORM	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CIS-1,3-DICHLOROPROPENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
DIBROMOCHLOROMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
ETHYLBENZENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
METHYLENE CHLORIDE	UG/KG	11.1	**11 J B**	**31 B**	**7.1 J B**	**20 B**
TETRACHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TOLUENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TRANS-1,2-DICHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TRICHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
VINYL CHLORIDE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U

NOTE: Shaded and bold values represent detected concentrations.
RL = average reporting limit
B = analyte is present in the method blank at a reportable level
U = compound was analyzed, but not detected

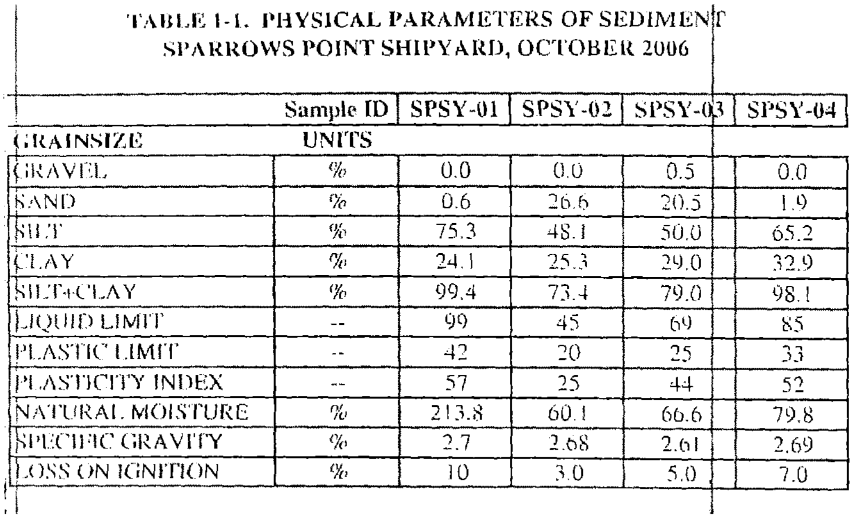


TABLE 1-1. PHYSICAL PARAMETERS OF SEDIMENT
SPARROWS POINT SHIPYARD, OCTOBER 2006

	Sample ID	SPSY-01	SPSY-02	SPSY-03	SPSY-04
GRAINSIZE	**UNITS**				
GRAVEL	%	0.0	0.0	0.5	0.0
SAND	%	0.6	26.6	20.5	1.9
SILT	%	75.3	48.1	50.0	65.2
CLAY	%	24.1	25.3	29.0	32.9
SILT+CLAY	%	99.4	73.4	79.0	98.1
LIQUID LIMIT	--	99	45	69	85
PLASTIC LIMIT	--	42	20	25	33
PLASTICITY INDEX	--	57	25	44	52
NATURAL MOISTURE	%	213.8	60.1	66.6	79.8
SPECIFIC GRAVITY	%	2.7	2.68	2.61	2.69
LOSS ON IGNITION	%	10	3.0	5.0	7.0

TABLE 1-2 GENERAL CHEMISTRY PARAMETERS IN SEDIMENT
SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
OIL & GREASE	MG/KG	373	**1,250**	270 U	291 U	**3,330**
TOTAL KJELDAHL NITROGEN	MG/KG	336	**3,100**	**732**	**1,120**	**1,350**
TOTAL ORGANIC CARBON	MG/KG	1042	**27,300**	**6,770**	**9,820**	**17,800**
TOTAL PHOSPHORUS	MG/KG	08	**1,720**	**255**	**693**	**819**
PERCENT SOLIDS	%	1	**28**	**61.7**	**57.2**	51.3
pH	NO UNITS	--	**8**	**8**	**8**	7.4

NOTE: Shaded and bold values represent detected concentrations.
RL = average *reporting limit*
U = compound was analyzed, but not detected

TABLE 1-3 METAL CONCENTRATIONS (MG/KG) IN SEDIMENT SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
ANTIMONY	MG/KG	1.18	**0.96 BN**	0.97 N U	0.96 N U	**0.73 BN**
ARSENIC	MG/KG	1.18	**56.9**	**4.7**	**5.1**	**12.5**
BERYLLIUM	MG/KG	0.47	**1.7**	**0.58**	**1.1**	**1.4**
CADMIUM	MG/KG	0.71	**1.5**	0.48 U	0.48 U	**1.6**
CHROMIUM	MG/KG	0.71	**328 NE**	**31.5 NE**	**31.9 NE**	**128 NE**
COPPER	MG/KG	2.93	**201**	**13**	**16.1**	**129**
LEAD	MG/KG	0.36	**180 E**	**17.8 E**	**14.9 E**	**203 E**
MERCURY	MG/KG	0.04	**0.3**	**0.039**	**0.04**	**0.32**
NICKEL	MG/KG	4.73	**43 E**	**10.6 E**	**21.1 E**	**43.7 E**
SELENIUM	MG/KG	0.59	**6.2**	**0.4 B**	0.48 U	**1.2**
SILVER	MG/KG	0.59	**1.5**	**0.18 B**	**0.2 B**	**0.75**
THALLIUM	MG/KG	1.18	1.8 U	0.97 U	0.96 U	0.97 U
ZINC	MG/KG	2.33	**670 E**	**58.1 E**	**70.3 E**	**380 E**

NOTE: Shaded and bold values represent detected concentrations.
RL = average reporting limit
B = compound was detected, but below the reporting limit (value is estimated)
E = Reported value is estimated because of presence of interference.
N = Spiked sample recovery is not within control limits.
U = compound was analyzed, but not detected

TABLE 1-4 PCB CONGENER CONCENTRATIONS (UG/KG) IN SEDIMENT SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
PCB 8 (BZ)	UG/KG	1.93	**1.2 J PG**	1.4 U	1.5 U	**0.58 J PG**
PCB 18 (BZ)	UG/KG	1.93	**4.7 PG**	**0.2 J PG**	**0.2 J PG**	**2.5 PG**
PCB 28 (BZ)	UG/KG	1.93	**7.7 PG**	**0.32 J PG**	1.5 U	**3.3 PG**
PCB 44 (BZ)	UG/KG	1.93	**7.2**	1.4 U	1.5 U	**2.3 PG**
PCB 49 (BZ)	UG/KG	1.93	**7.4**	1.4 U	1.5 U	**5.7**
PCB 52 (BZ)	UG/KG	1.93	**9.5**	1.4 U	1.5 U	**8.1**
PCB 66 (BZ)	UG/KG	1.93	**7 PG**	**0.5 J**	1.5 U	**2.5 PG**
PCB 77 (BZ)	UG/KG	1.93	**1.2 J PG**	1.4 U	1.5 U	**0.57 J PG**
PCB 87 (BZ)	UG/KG	1.93	**2.6 J PG**	1.4 U	1.5 U	**1.7 PG**
PCB 90 (BZ)	UG/KG	1.93	3.1 U	1.4 U	1.5 U	1.7 U
PCB 101 (BZ)	UG/KG	1.93	**11**	1.4 U	1.5 U	**9.4**
PCB 105 (BZ)	UG/KG	1.93	**2.6 J**	1.4 U	1.5 U	**1.6 J**
PCB 118 (BZ)	UG/KG	1.93	**9**	1.4 U	1.5 U	**4.8**
PCB 126 (BZ)	UG/KG	1.93	3.1 U	1.4 U	1.5 U	1.7 U
PCB 128 (BZ)	UG/KG	1.93	**1.6 J PG**	1.4 U	1.5 U	**0.91 J PG**
PCB 138 (BZ)	UG/KG	1.93	**5.1 PG**	1.4 U	1.5 U	**3.5 PG**
PCB 153 (BZ)	UG/KG	1.93	**12**	**0.47 J**	**0.38 J**	**12**
PCB 156 (BZ)	UG/KG	1.93	**0.81 J**	1.4 U	1.5 U	**0.52 J**
PCB 169 (BZ)	UG/KG	1.93	3.1 U	1.4 U	1.5 U	1.7 U
PCB 170 (BZ)	UG/KG	1.93	**3.9**	1.4 U	1.5 U	**2.3 PG**
PCB 180 (BZ)	UG/KG	1.93	**8.1**	1.4 U	1.5 U	**4.6 PG**
PCB 183 (BZ)	UG/KG	1.93	**1.8 J PG**	1.4 U	1.5 U	**1.3 J PG**
PCB 184 (BZ)	UG/KG	1.93	3.1 U	1.4 U	1.5 U	1.7 U
PCB 187 (BZ)	UG/KG	1.93	**6.1**	1.4 U	1.5 U	**5.4**
PCB 195 (BZ)	UG/KG	1.93	**0.79 J**	1.4 U	1.5 U	**0.48 J PG**
PCB 206 (BZ)	UG/KG	1.93	**3.1**	1.4 U	1.5 U	**1.2 J**
PCB 209 (BZ)	UG/KG	1.93	**3 J PG**	1.4 U	1.5 U	1.7 U
TOTAL PCBs (ND=0)	UG/KG	---	**196**	**2.98**	**1.16**	**129**
TOTAL PCBs (ND=1/2DL)	UG/KG	---	**202**	**22.6**	**25.2**	**132**

*PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed, but not detected

TABLE 1-5 CHLORINATED PESTICIDE CONCENTRATIONS (UG/KG) IN SEDIMENT SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
4,4'-DDD	UG/KG	5.85	**9**	1.7 U	1.6 U	17 U
4,4'-DDE	UG/KG	5.85	**8.7**	1.7 U	1.6 U	**6 J**
4,4'-DDT	UG/KG	5.85	**7.9 PG**	**1.4 J**	1.6 U	**8.1 J PG**
ALDRIN	UG/KG	5.85	**7.1**	1.7 U	1.6 U	17 U
ALPHA-BHC	UG/KG	5.85	**5 PG**	**0.96 J PG**	**1.3 J PG**	**1.6 J PG**
ALPHA-CHLORDANE	UG/KG	5.85	**1.4 J PG**	1.7 U	1.6 U	17 U
BETA-BHC	UG/KG	5.85	3.1 U	1.7 U	1.6 U	17 U
DELTA-BHC	UG/KG	5.85	3.1 U	1.7 U	1.6 U	17 U
DIELDRIN	UG/KG	5.85	**0.78 J PG**	1.7 U	1.6 U	17 U
ENDOSULFAN I	UG/KG	5.85	3.1 U	1.7 U	1.6 U	17 U
ENDOSULFAN II	UG/KG	5.85	**10**	**1.1 J**	1.6 U	17 U
ENDOSULFAN SULFATE	UG/KG	5.85	3.1 U	1.7 U	1.6 U	17 U
ENDRIN	UG/KG	5.85	**3 J PG**	**0.28 J PG**	**0.24 J PG**	**4.5 J PG**
ENDRIN ALDEHYDE	UG/KG	5.85	**2.5 J PG**	**0.68 J PG**	**1.1 J PG**	**6.3 J PG**
ENDRIN KETONE	UG/KG	5.85	**2.3 J PG**	1.7 U	1.6 U	17 U
GAMMA-BHC (LINDANE)	UG/KG	5.85	3.1 U	1.7 U	1.6 U	17 U
GAMMA-CHLORDANE	UG/KG	5.85	**0.99 J PG**	1.7 U	1.6 U	**2.1 J PG**
HEPTACHLOR	UG/KG	5.85	3.1 U	**0.22 J PG**	**0.19 J PG**	17 U
HEPTACHLOR EPOXIDE	UG/KG	5.85	3.1 U	1.7 U	1.6 U	17 U
METHOXYCHLOR	UG/KG	11.10	6 U	3.2 U	3.2 U	32 U
TOXAPHENE	UG/KG	225	120 U	65 U	64 U	650 U

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed, but not detected

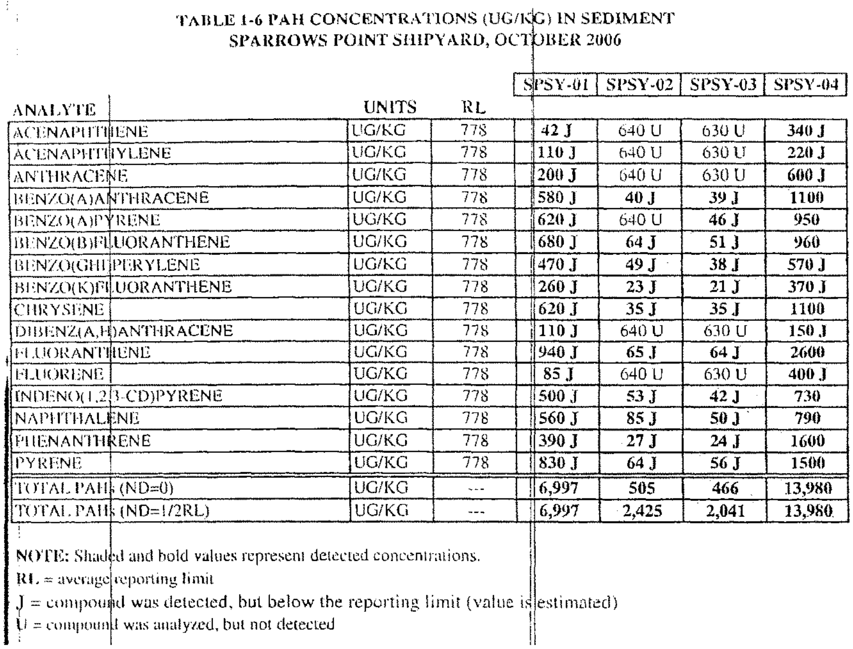


TABLE 1-6 PAH CONCENTRATIONS (UG/KG) IN SEDIMENT
SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
ACENAPHTHENE	UG/KG	778	**42 J**	640 U	630 U	**340 J**
ACENAPHTHYLENE	UG/KG	778	**110 J**	640 U	630 U	**220 J**
ANTHRACENE	UG/KG	778	**200 J**	640 U	630 U	**600 J**
BENZO(A)ANTHRACENE	UG/KG	778	**580 J**	**40 J**	**39 J**	**1100**
BENZO(A)PYRENE	UG/KG	778	**620 J**	640 U	**46 J**	**950**
BENZO(B)FLUORANTHENE	UG/KG	778	**680 J**	**64 J**	**51 J**	**960**
BENZO(GHI)PERYLENE	UG/KG	778	**470 J**	**49 J**	**38 J**	**570 J**
BENZO(K)FLUORANTHENE	UG/KG	778	**260 J**	**23 J**	**21 J**	**370 J**
CHRYSENE	UG/KG	778	**620 J**	**35 J**	**35 J**	**1100**
DIBENZ(A,H)ANTHRACENE	UG/KG	778	**110 J**	640 U	630 U	**150 J**
FLUORANTHENE	UG/KG	778	**940 J**	**65 J**	**64 J**	**2600**
FLUORENE	UG/KG	778	**85 J**	640 U	630 U	**400 J**
INDENO(1,2,3-CD)PYRENE	UG/KG	778	**500 J**	**53 J**	**42 J**	**730**
NAPHTHALENE	UG/KG	778	**560 J**	**85 J**	**50 J**	**790**
PHENANTHRENE	UG/KG	778	**390 J**	**27 J**	**24 J**	**1600**
PYRENE	UG/KG	778	**830 J**	**64 J**	**56 J**	**1500**
TOTAL PAHs (ND=0)	UG/KG	---	**6,997**	**505**	**466**	**13,980**
TOTAL PAHs (ND=1/2RL)	UG/KG	---	**6,997**	**2,425**	**2,041**	**13,980**

NOTE: Shaded and bold values represent detected concentrations.
RL = average reporting limit
J = compound was detected, but below the reporting limit (value is estimated)
U = compound was analyzed, but not detected

TABLE 1-7 SEMI-VOLATILE CONCENTRATIONS (UG/KG) IN SEDIMENT SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
1,2,4-TRICHLOROBENZENE	UG/KG	778	1200 U	640 U	630 U	640 U
1,2-DICHLOROBENZENE	UG/KG	778	1200 U	640 U	630 U	640 U
1,2-DIPHENYLHYDRAZINE	UG/KG	778	1200 U	640 U	630 U	640 U
1,3-DICHLOROBENZENE	UG/KG	778	1200 U	640 U	630 U	640 U
1,4-DICHLOROBENZENE	UG/KG	778	1200 U	640 U	630 U	640 U
2,4,6-TRICHLOROPHENOL	UG/KG	778	1200 U	640 U	630 U	640 U
2,4-DICHLOROPHENOL	UG/KG	778	1200 U	640 U	630 U	640 U
2,4-DIMETHYLPHENOL	UG/KG	778	1200 U	640 U	630 U	640 U
2,4-DINITROPHENOL	UG/KG	3750	5800 U	3100 U	3000 U	3100 U
2,4-DINITROTOLUENE	UG/KG	778	1200 U	640 U	630 U	640 U
2,6-DINITROTOLUENE	UG/KG	778	1200 U	640 U	630 U	640 U
2-CHLORONAPHTHALENE	UG/KG	778	1200 U	640 U	630 U	640 U
2-CHLOROPHENOL	UG/KG	778	1200 U	640 U	630 U	640 U
2-METHYL-4,6-DINITROPHENOL	UG/KG	3750	5800 U	3100 U	3000 U	3100 U
2-NITROPHENOL	UG/KG	778	1200 U	640 U	630 U	640 U
3,3'-DICHLOROBENZIDINE	UG/KG	3750	5800 U	3100 U	3000 U	3100 U
4-BROMOPHENYL PHENYL ETHER	UG/KG	778	1200 U	640 U	630 U	640 U
4-CHLORO-3-METHYLPHENOL	UG/KG	778	1200 U	640 U	630 U	640 U
4-CHLOROPHENYL PHENYL ETHER	UG/KG	778	1200 U	640 U	630 U	640 U
4-NITROPHENOL	UG/KG	3750	5800 U	3100 U	3000 U	3100 U
BENZIDINE	UG/KG	778	1200 U	640 U	630 U	640 U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	778	1200 U	640 U	630 U	640 U
BIS(2-CHLOROETHYL) ETHER	UG/KG	778	1200 U	640 U	630 U	640 U
BIS(2-CHLOROISOPROPYL) ETHER	UG/KG	778	1200 U	640 U	630 U	640 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	778	**440 J**	640 U	630 U	**340 J**
BUTYL BENZYL PHTHALATE	UG/KG	778	1200 U	640 U	630 U	**91 J**
DIETHYL PHTHALATE	UG/KG	778	1200 U	640 U	630 U	640 U
DIMETHYL PHTHALATE	UG/KG	778	1200 U	640 U	630 U	640 U
DI-N-BUTYL PHTHALATE	UG/KG	778	1200 U	640 U	630 U	640 U
DI-N-OCTYL PHTHALATE	UG/KG	778	1200 U	640 U	630 U	640 U
HEXACHLOROBENZENE	UG/KG	778	1200 U	640 U	630 U	640 U
HEXACHLOROBUTADIENE	UG/KG	778	1200 U	640 U	630 U	640 U
HEXACHLOROCYCLOPENTADIENE	UG/KG	3750	5800 U	3100 U	3000 U	3100 U
HEXACHLOROETHANE	UG/KG	778	1200 U	640 U	630 U	640 U
ISOPHORONE	UG/KG	778	**140 J**	**75 J**	**68 J**	**80 J**
NITROBENZENE	UG/KG	778	1200 U	640 U	630 U	640 U
N-NITROSODIMETHYLAMINE	UG/KG	778	1200 U	640 U	630 U	640 U
N-NITROSODI-N-PROPYLAMINE	UG/KG	778	1200 U	640 U	630 U	640 U
N-NITROSODIPHENYLAMINE	UG/KG	778	1200 U	640 U	630 U	640 U
PENTACHLOROPHENOL	UG/KG	3750	5800 U	3100 U	3000 U	3100 U
PHENOL	UG/KG	778	**68 J**	**55 J**	630 U	**94 J**

NOTE: Shaded and bold values represent detected concentrations.

RL = average reporting limit

J = compound was detected, but below the reporting limit (value is estimated)

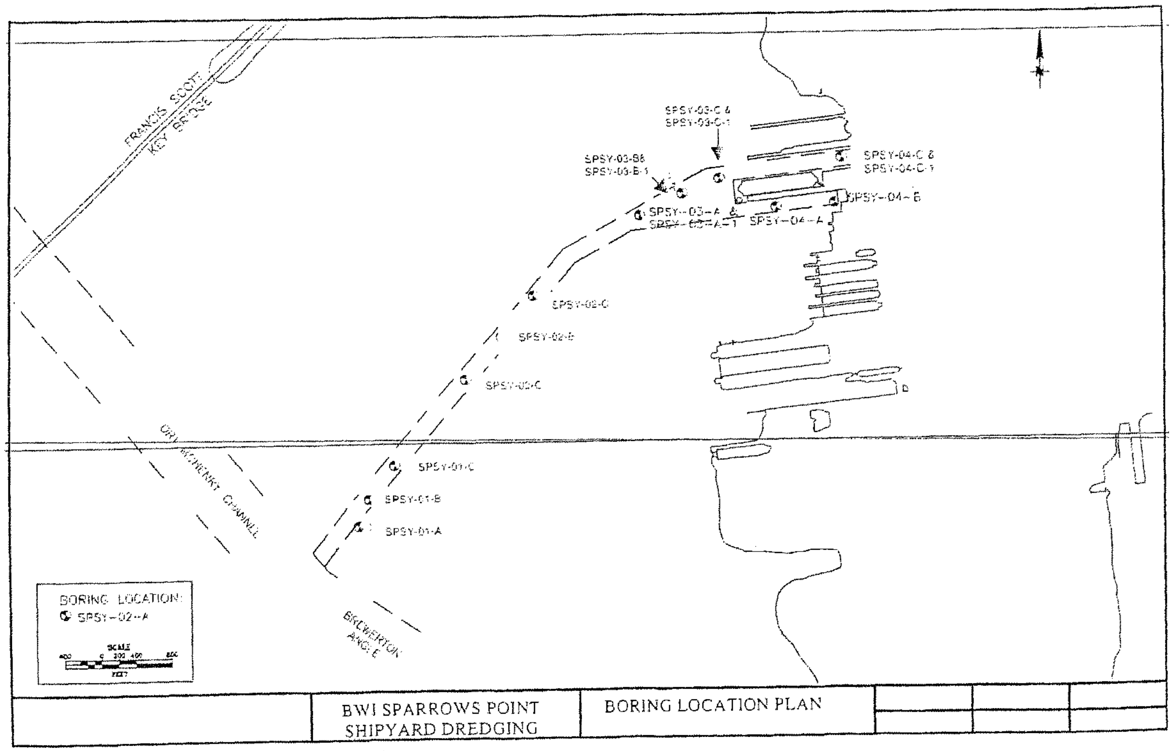
U = compound was analyzed, but not detected

TABLE 1-8 VOLATILE CONCENTRATIONS (UG/KG) IN SEDIMENT SPARROWS POINT SHIPYARD, OCTOBER 2006

ANALYTE	UNITS	RL	SPSY-01	SPSY-02	SPSY-03	SPSY-04
1,1,1-TRICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1,2-TRICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1-DICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,1-DICHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,2-DICHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
1,2-DICHLOROPROPANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
2-CHLOROETHYL VINYL ETHER	UG/KG	22	36 U	16 U	17 U	19 U
ACROLEIN	UG/KG	220	360 U	160 U	170 U	190 U
ACRYLONITRILE	UG/KG	220	360 U	160 U	170 U	190 U
BENZENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
BROMODICHLOROMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
BROMOFORM	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
BROMOMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CARBON TETRACHLORIDE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROBENZENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROFORM	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CHLOROMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
CIS-1,3-DICHLOROPROPENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
DIBROMOCHLOROMETHANE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
ETHYLBENZENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
METHYLENE CHLORIDE	UG/KG	11.1	**11 J B**	**31 B**	**7.1 J B**	**20 B**
TETRACHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TOLUENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TRANS-1,2-DICHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
TRICHLOROETHENE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U
VINYL CHLORIDE	UG/KG	11.1	18 U	8.1 U	8.7 U	9.7 U

NOTE: *Shaded and bold values represent detected concentrations.*
RL = average reporting limit
B = analyte is present in the method blank at a reportable level
U = compound was analyzed, but not detected

BWI SPARROWS POINT SHIPYARD SAMPLING
~~BORING LOCATIONS~~



MARYLAND

Department of the Environment

Water Quality Status Near Sparrows Point: Toxic Contaminants

LNG Task Force

Nov. 1, 2006

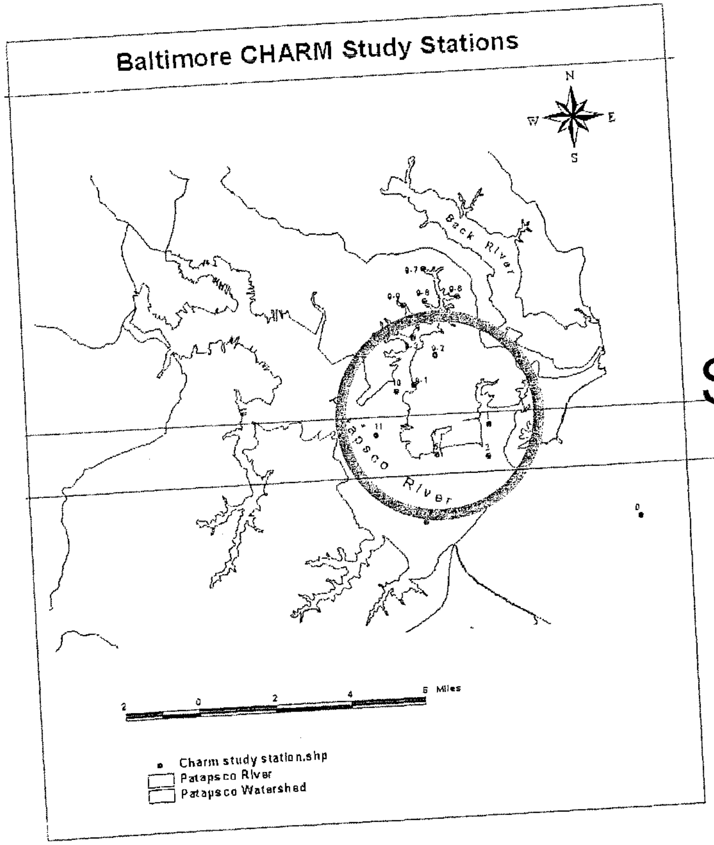
MDE

Locations

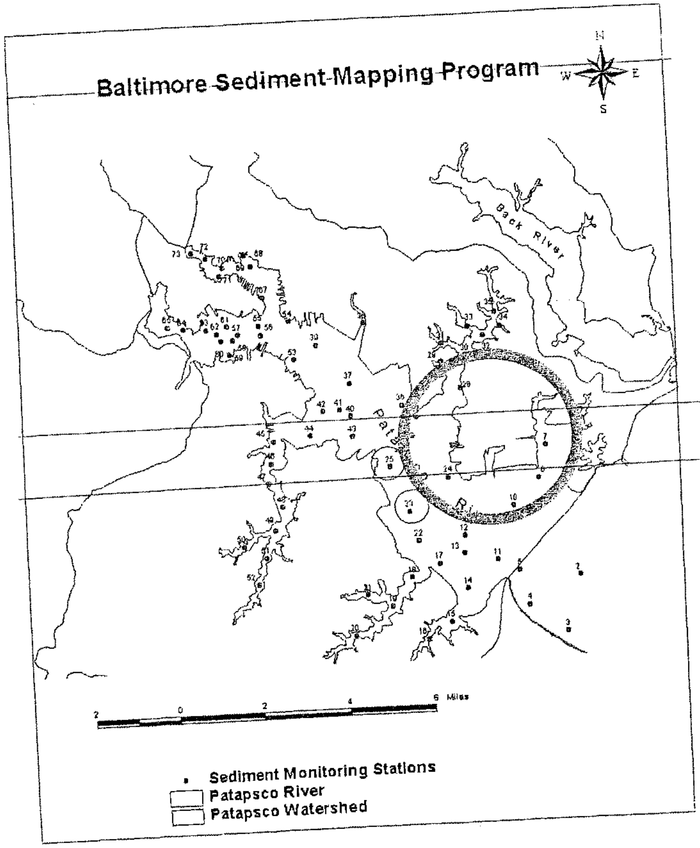
- Two major recent studies of sediment in Baltimore Harbor
  - ~~CHARM Study~~
  - Mapping Study

Station 11

MDE



MDE


Baltimore Sediment-Mapping Program
N
W
E
S
Back River
Pat
R
2
0
2
4
6 Miles
Sediment Monitoring Stations
Patapsco River
Patapsco Watershed

Station 24

Comparison
23 and 25

MDE

Dissolved Metals (ug/l)
CHARM STN. 11

Contaminant	Mean Diss	Max. Value	WQC*
CD	0.31	0.31	4.3/2.2
CR[1]	0.45	0.82	16/11
CU	0.90	1.32	5.2/3.4
NI	2.18	3.50	75/8.3
PB	0.52	0.56	65/2.5
ZN	9.18	10.72	90/81

N = 4

*Most stringent of FW or SW; Acute/Chronic

[1] Cr VI; more toxic than Cr III

MDE

Dissolved PAHs an PCBs (ug/l) CHARM STN. 11

Contaminant	Mean Diss	Max. Value	WQC*
PAH- Diss	21.00	32	
PAH- Tot	91.75	144	
PAH- Susp	71.00	119	
PCB - Diss	0.31	0.67	
PCB - Diss	1.53	1.94	14
PCB - Diss	1.23	1.84	

N = 4 for PAHs; N = 3 for PCBs

MARYLAND

MDE

Sediment Metals (ug/g dry wt)
Mapping STN. 24 cf 23 and 25

Contaminant	Stn 24	Stn 23	Stn 25
CR	321	524	572
CU	116	153	129
HG	54	519	531
NI	67	70	68
PB	125	157	128
ZN	561	715	582
Tot. PCBs **ng**	154	151	200
Tot. PAHs **ng**	**40,435**	13,036	12,005

MARYLAND

MDE

Sediment Metals (ug/g dry wt)
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Contaminant	Stn 24	Stn 23	Stn 25
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Tot. PAHs **ng**	**40,435**	13,036	12,005

MARYLAND

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Assessment and Restoration Division
7600 Sand Point Way N.E. -
Seattle, Washington 98115

March 9, 2007

Russell Donnelly
Environmental Analyst
LNG Opposition Team
2114 Oak Road
Baltimore, MD 21219

RE: Sediment data around Sparrows Point

Dear Mr. Donnelly:

I have reviewed the material you supplied regarding sediment contamination surrounding Sparrows Point, MD. When assessing the potential risk of suspected hazardous waste sites, our office typically employs a triad approach using sediment chemistry, sediment bioassay testing and benthic community structure. If persistent, bioaccumulative toxins (PBTs), such as polychlorinated biphenyls (PCBs) are present, we would typically include a fourth element of bioaccumulation testing as well. Within that context, the portions of material you sent that were useable for my review were limited to:

- Dan Fisher's sediment bioassay and benthic community results;
- The excerpts of EA Engineering's 1985 data report;
- Excerpts of data from the October 2006 sampling;
- Partial data related to one sample from the Chesapeake Bay Program;
- Partial data from the CHARM and mapping studies

I also reviewed the analysis of data conducted by Environmental Integrity. I should note that the ancillary information which would provide further perspective on these data were typically missing from the partial excerpts provided.

My first conclusion would be that the level of characterization of the sediment contamination is quite deficient for any use beyond preliminary risk screening. Not only is the spatial coverage insufficient, but more importantly, the vertical characterization is not sufficient to estimate what exposures levels could be at the intended dredging horizon. This is a critical factor, as that dictates what the post-dredging exposure levels would be. That exposure level influences benthic recolonization, and determines dietary exposure to fish and shellfish using the area as foraging grounds if they are consuming contaminated prey. The vertical concentrations may also be significant for predicting potential exposures during dredging, as will be discussed later.

My interpretation of chemical analysis of the 1984 composite samples indicates a high likelihood that these samples would be considered toxic if tested using standard laboratory bioassays, particularly samples 4 and 5. Samples 4 and 5 both had a large number of individual pollutants, primarily metals and polycyclic aromatic hydrocarbons (PAHs), exceeding their respective toxicological benchmarks (12 and 19, respectively). Similar comparisons of samples having this number of exceedances (Long 2000), suggests an 85% probability that these samples would be toxic to amphipods, an important and sensitive component of the benthic macroinvertebrate community. Likewise, the average ratio of pollutant concentrations observed in these samples versus their ecological benchmarks (Effects Range Median or ERMs, or Apparent Effects Thresholds or AETs) exceeded unity (3.1 and 1.9), again suggesting that these compounds are present at sufficiently elevated levels to impart toxicity. This chemical analysis also indicates that polychlorinated biphenyls (PCBs), a significant PBT, are present in these samples at levels of concern. Likewise, DDD, another PBT, is present in sample 5 at a concentration above its level of concern. The remaining three samples, with three to six pollutants exceeding their respective benchmarks and ERM quotients fro 0.5 to 0.7, would tend to suggest a lower degree of concern. However, these samples were composites, and since compositing tends to reduce maxima, the results for these samples still indicate a level of concern that should not be dismissed.

The data from 2006 suggest a different situation. Although PAHs are present, none exceed their respective ERM benchmarks. In fact, the only exceedances are for zinc, DDT, and PCBs in sample 1. The area represented by the composites which comprise sample 1 appear to be from an area that was un-sampled in 1984. The area nearest the shore, in the berthing area, generally had the highest concentrations of analytes, consistent with the 1984 sampling though. Without a thorough knowledge of the history of the area, the deposition rates, the bioturbation rates, and so on, it would be pure conjecture for me to hypothesize why there is the difference between these two data sets.

While comparisons of the 2006 data to ERM values do not indicate a situation quite as egregious as comparisons of the 1984 data do, concentrations for many analytes from the 2006 samples still exceed other toxicological benchmarks, such as the Probable Effects Levels (PELs). And conversely, there are numerous analytes which exceed lower thresholds (Effects Range Low or ERLs) of toxicity, clearly indicating that a substantial potential for toxicity cannot be eliminated based upon these results.

For screening level risk assessments, NOAA adheres to the same basic philosophy as the US Environmental Protection Agency. Loosely stated, this philosophy holds that if results of preliminary sampling (assuming a proper sampling design) cannot conclusively indicate the lack of potential for risk (for instance, all analytes are less than their respective ERLs), then further evaluation should be conducted to ascertain the exact risk potential.

Often, NOAA must rely on a weight-of-evidence approach when assessing risk potential, meaning that there is not one definitive study that provides all necessary information, but the trends or conclusions of all available studies are consistent with each other. Because the data available from the CHARM and mapping studies or from the Chesapeake Bay Program do not coincide exactly with 1984 or 2006 samples, it is difficult to evaluate these data by direct comparison. However, it is noted that the general trend for a relatively higher degree of contamination nearby to Sparrows Point is consistent with the trends noted in both the 1984 and 2006 data. Likewise, the bioassay data from Fisher and others were not generated from any of these samples with analytical chemistry, and therefore do not constitute a triad approach to investigation. However, their results are internally consistent, in that stations with poor survival in laboratory bioassays also generally display a depauperate benthic community. Also, the high degree of mortality observed

I also reviewed the material from Dan Fisher, plus additional related journal articles which provided more complete information. Although there is only one station near Sparrows Point, these data provide a nearly complete sediment triad; organic analysis of the station nearest Sparrows Point was not possible due to the oil and tar present. This station did have the lowest amphipod survival observed in the Patapsco River region, had some of the lowest native densities of amphipods, and elevated levels of metals. In fact, the highest chromium and zinc were observed in samples from this station. This triad of information confirms high levels of toxicants are in the area; corroborates predictions of toxicity based upon the sediment chemistry with observed lethality; and the impoverished density of native amphipods tends to indicate that these toxicants are bioavailable in the field and are negatively impacting the benthic community.

In summary, I find that the characterization of the area is not sufficient to firmly establish what risk may be posed by dredging of sediments within the area. However, the available, limited data do indicate that the potential for risk to aquatic resources cannot be eliminated. Therefore, further characterization of this material is in order. This evaluation should include better spatial coverage for chemical analyses, with proper depth profiles; sediment bioassays; benthic community analyses; and sediment bioaccumulation testing.

Given the available data, I would conclude that open water, navigation style dredging should not take place until further evaluation can decisively establish that significant releases of hazardous substances will not occur during dredging, and, that concentrations of contaminants at the future sediment-water interface will not pose unacceptable risk to aquatic resources. I should point out that in the event that further evaluation does suggest that releases of hazardous substances are possible, there are environmental style dredging alternatives which could be employed to reduce or eliminate such releases beyond the dredging zone. Likewise, there are alternatives to deal with potentially exposed contamination at the proposed dredging horizon. For instance, over-dredging followed by back-filling with a cap of clean material is one technique that can be used to reduce risk.

Lastly, I found the analysis of data conducted by Environmental Integrity to be generally accurate and appropriate. Because I do not have specific knowledge of the NOAA oyster restoration project located within 2000 yards from where some of these samples were taken, I am deferring to staff from the Restoration Center with local expertise to address issues specific to that project.

Sincerely,

Michael Buchman

Michael Buchman
Environmental Scientist

Cc: Simeon Hahn, NOAA/ARD
Don Reed, DOC

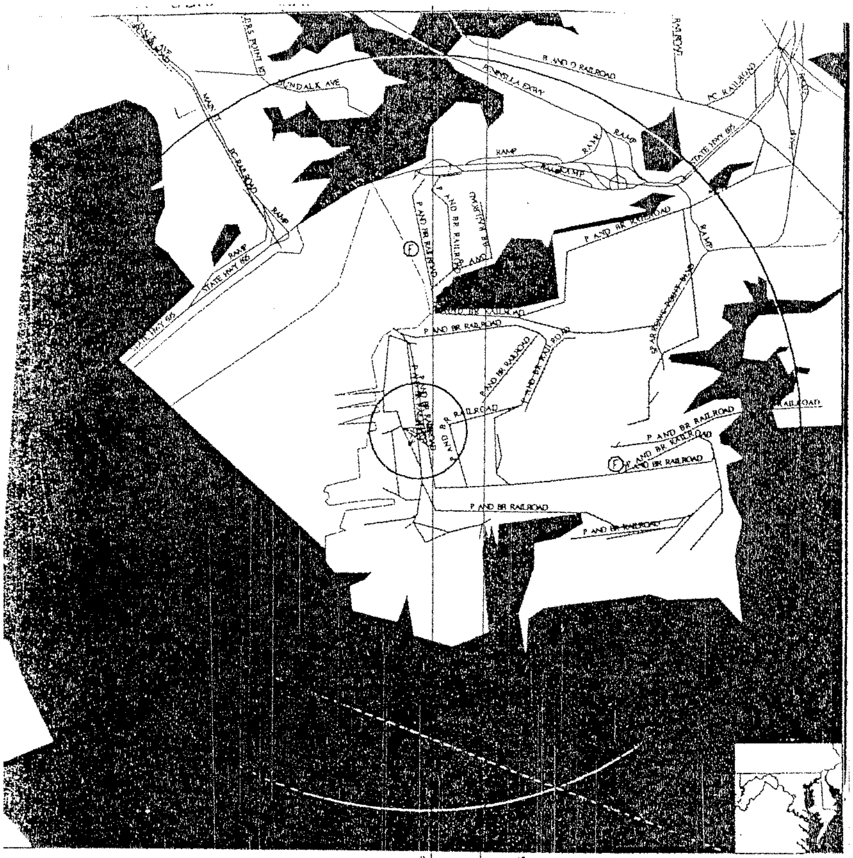
2. GEO TECHNICAL/GEO PHYSICAL:

* United States Geological Survey (USGS) Site Plat

** NOTE: This Document Acquired by Rust Environmental & Infrastructure Designates that the Sparrows Point Shipyard Occupies A FAULTLINE on an Earthquake Epicenter of Richter 5 or Greater **

* Schnabel Preliminary Geotechnical Engineering Study at Lloyd Point, Sparrows Point Shipyard

** NOTE: The Results of this study consistently cover 1800 Acres at the Sparrows Point Peninsula. Actual Land is 600 acres. The BALANCE OF THE ENTIRE 2442 Acres is Fill Material consisting of SLAG and HAZARDOUS WASTE **



Source: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92

- Major Roads
- Contour lines (25 foot Interval unless otherwise shown)
- Waterways

Ⓞ - Earthquake epicenter, Richter 5 or greater.

Ⓕ S - Closest well according to (F)ederal or (S)tate database in quadrant.

Ⓟ - Closest public water supply well.

No contour lines were detected within this map area.

ARGET PROPERTY:	Bethlehem Steel, Sparrows Pt.	CUSTOMER:	Rust Env. & Infrastructure
ADDRESS:	Sparrows Pt., Shipyard Rd.	CONTACT:	Ms. Marty Costello
ITY/STATE/ZIP:	Sparrows Point MD 21219	INQUIRY #:	1152299.1p
ATLONG	39.2182 / 76.4924	DATE:	December 24, 1996 3:35 pm

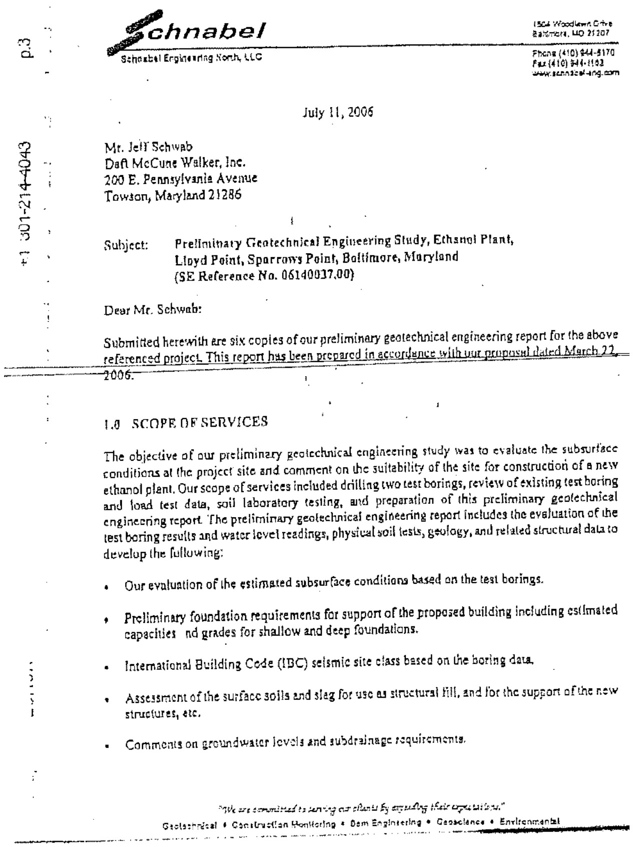
Preliminary Geotechnical Engineering Study
Ethanol Plant
Lloyd Point
Sparrows Point
Baltimore, Maryland

SE Reference No. 06140037.00

Daft McCune Walker, Inc.
200 E. Pennsylvania Avenue
Towson, Maryland 21286

July 11, 2006

Schnabel
Schnabel Engineering North, LLC



Schnabel
Schnabel Engineering North, LLC

1504 Woodlawn Drive
Baltimore, MD 21207
Phone (410) 944-5170
Fax (410) 944-1163
www.schnabel-eng.com

July 11, 2006

Mr. Jeff Schwab
Daft McCune Walker, Inc.
200 E. Pennsylvania Avenue
Towson, Maryland 21286

Subject: **Preliminary Geotechnical Engineering Study, Ethanol Plant, Lloyd Point, Sparrows Point, Baltimore, Maryland (SE Reference No. 06140037.00)**

Dear Mr. Schwab:

Submitted herewith are six copies of our preliminary geotechnical engineering report for the above referenced project. This report has been prepared in accordance with our proposal dated March 22, 2006.

1.0 SCOPE OF SERVICES

The objective of our preliminary geotechnical engineering study was to evaluate the subsurface conditions at the project site and comment on the suitability of the site for construction of a new ethanol plant. Our scope of services included drilling two test borings, review of existing test boring and load test data, soil laboratory testing, and preparation of this preliminary geotechnical engineering report. The preliminary geotechnical engineering report includes the evaluation of the test boring results and water level readings, physical soil tests, geology, and related structural data to develop the following:

- Our evaluation of the estimated subsurface conditions based on the test borings.
- Preliminary foundation requirements for support of the proposed building including estimated capacities and grades for shallow and deep foundations.
- International Building Code (IBC) seismic site class based on the boring data.
- Assessment of the surface soils and slag for use as structural fill, and for the support of the new structures, etc.
- Comments on groundwater levels and subdrainage requirements.

"We are committed to serving our clients by exceeding their expectations."

- Discussion of construction considerations related to foundation installation, temporary dewatering, earthwork and compaction, and scope of quality control work necessary during construction.

Services with respect to environmental assessments, erosion control, cost or quantity estimates, plans, specifications, construction observation and testing, and a final geotechnical study were not included in our scope of services.

2.0 SITE DESCRIPTION

The site is located adjacent to the former Bethlehem Steel plant off of Shipyard Road on Lloyd Point in Sparrows Point, Maryland. The site is bounded by Shipyard Road to the east, an existing paved access road and warehouse to the south, and Bear Creek, a branch of the Patapsco River, to the north and west. The site is currently occupied by numerous paved, gravel, and dirt access roads, open grass-covered areas, and rubble stockpiles. An abandoned parking lot exists to the east of the site, off of Shipyard Road. The parking area surrounds a maintenance shed and warehouse. The site is generally level, with site grades at approximately EL 10.0 with an approximate 2.0-foot variation in either direction, not including the stockpiles. Existing site utilities include underground and overhead electric, bisecting the site in a north-south direction.

3.0 PROPOSED CONSTRUCTION

We understand that new grain, ethanol, and fermentation tanks are planned at the project site. The new grain storage silos will measure about 105-feet in diameter. We understand that the new ethanol plant equipment will be placed inside the existing 500-foot long warehouse and

The main process building and energy center equipment will require a minimum ground pressure of 2.0 to 2.5 ksf. The ethanol storage tank will require a minimum ground pressure of 2.5 to 3.5 ksf. The evaporators are planned with a mat foundation requiring a minimum ground pressure of 3.0 to 3.5 ksf. The fermentation and beer wells and process tanks will require a minimum ground pressure of 4.5 to 5.0 ksf. Preliminary structural information for this project was provided by DMW, Inc.

4.0 SUBSURFACE CONDITIONS

4.1 Geology

We reviewed existing geologic data and information in our files. Based on this review, we believe the geologic stratigraphy consists of existing fill soils overlying natural Alluvial and Potomac Group soils.

The Stratum A materials are existing fill soils placed during previous site development and during the construction of the previous and existing site structures. The Stratum B soils are believed to be Alluvial soils, water borne deposits likely from the nearby Patapsco River. We believe the Stratum C soils are Cretaceous Aged Patapsco Formation soils of the Potomac Group. These soils are locally known to be highly overconsolidated

4.2 Data Collection Techniques

Connelly & Associates drilled two test borings between May 22 and 24, 2006 under our observation. The test boring logs and a location plan are enclosed. We will retain soil samples up to 45 days beyond the issuance of this report, unless you request other disposition.

Our geotechnical laboratory conducted tests on selected samples obtained in the borings. This testing aided in the classification of soils encountered in the subsurface exploration, and provided data for use in the development of foundation and earthwork recommendations. The results of the laboratory tests are included in Appendix B. he logs in Appendix C show the natural moisture content values of selected soil samples.

4.3 Generalized Subsurface Stratigraphy

We have characterized the following generalized subsurface soil stratigraphy based on the boring data:

Surface Material:

Four inches of gravel was encountered at test boring B-2.

Stratum A: Existing Fill

Existing fill soils consisting of sand, gravel, concrete, and rock fragments, with various amounts of silt, slag, cinders, and tar were encountered to depths of 19.5 to 34.5-feet. The bottom of the fill varies from about EL -8.5 to EL -24.5. Based on the standard penetration tests, these fills appear to have been placed in an uncontrolled manner without sufficient compactive effort. (*N* = 4 to 15)

Soil laboratory testing on a sample of these soils indicates high plasticity having a liquid limit of 82 and a plasticity index of 48. The natural moisture content of the sample was 37.6 percent.

Slag and cinder fragments were encountered at varying depths in both test borings. We suspect that the slag is from the former steel plant. X-ray diffraction (XRD) analysis was performed on a composite sample of the slag obtained from the test borings. The XRD test results indicate that the slag contains major components consisting of Larnite (Ca_2SiO_4) and Wuestite (FeO), with minor amounts of Hatruite (Ca_3SiO_4). Based on the results of the laboratory tests and on our previous experience, we expect that the steel slag materials are susceptible to substantial expansion when exposed to water.

Stratum B: Alluvium (Lowland Deposits)

Below Stratum A, the borings encountered Alluvial soils consisting of gray and brown CLAY (CL, CH) and SAND (SC, SP) with various amounts of gravel, shells, mica, and lignite to a depth of 103.5-feet in both test borings. Soil laboratory testing on a sample of these soils indicates high plasticity having a liquid limit of 69 and a plasticity index of 43. The natural moisture content of the sample was 43.6 percent. Based on the standard penetration tests performed, the cohesive soils in this stratum are generally very soft to medium stiff (N = WOH to 11). The granular soils in this stratum are generally loose to medium dense. (N = 5 to 15)

Stratum C: Patapsco Formation

That natural Stratum C soils consist of gray and brown SAND (SP) and GRAVEL (GM). These soils were encountered below Stratum B to the boring termination depths of 124.3 and 129.5-feet. Based on the standard penetration tests performed, these soils are generally dense to very dense. (N = 20 to 100/5")

4.4 Ground Water

The test boring logs note ground water level readings obtained in the borings during ~~and after completion and up to 24-hours after drilling~~. Water was encountered during drilling at depths of 8.0 to 8.5-feet below the ground surface. Based on our observations during drilling, we believe the static water level is most likely near EL 2.5 or about 8 to 9-feet below grade.

The ground water levels on the logs show our estimate of the hydrostatic water table at the time of drilling. The final design should anticipate fluctuations in the hydrostatic water table depending on variations in precipitation, surface runoff, evaporation, leaking utilities and similar factors.

5.0 PRELIMINARY GEOTECHNICAL ENGINEERING ANALYSIS

5.1 Discussion

The test borings indicate that the site is underlain by existing fills containing concrete rubble and steel slag. The fills are underlain by up to 84-feet of soft, compressible, alluvial soils. These soils are not considered suitable for foundation support. We considered soil improvement methods such as stone columns for support of the new structures. However, due to the depth of the unsuitable soils, soil improvement is not considered economically feasible for this site. Therefore, we recommend the development budget assumes that the new structures will be supported by driven H-pile foundations.

It is possible that other foundation systems may be feasible for lightly loaded structures. However, these must be evaluated based on specific structural requirements and subsurface data during the final geotechnical design study.

5.2 Driven Piles

We evaluated H-piles for support of the new structures. We considered various sizes of H-piles for support of the anticipated loads. Considering a factor of safety of two, we recommend the following H-pile sections allowable capacities be used for foundation support.

Anticipated Load	H-Pile Section	Allowable Capacity	Estimated Tip Grade
2.0 to 2.5 ksf	10X57	50 tons	EL -97
2.5 to 3.5 ksf	12X63	100 tons	EL -108
3.5 to 5.0 ksf	14X89	175 tons	EL -111

In order to obtain these capacities, the piles should be driven into the very dense Stratum C soils. Considering a cut-off near the ground surface (about EL 10), the pile lengths are estimated to be about 107 to 121-feet. If any fills are planned for the site, the pile capacities will be reduced due to downdrag caused by consolidation of the alluvial soils.

The production piles should be driven to within at least 2 feet of the estimated tip elevations. Dynamic testing of the piles should be used to determine pile capacities and strength gain (setup) and establish pile driving criteria for the production piles.

5.3 New Equipment – Existing Warehouse

Some of the new ethanol plant equipment will be constructed inside of the existing warehouse. We understand from our conversations with DMW that the warehouse slab appears to be in good condition and that there is no evidence of cracking or heaving of the slab. It may be feasible to support some of the lightly loaded equipment with contact pressures of less than about 500 psf on top of the existing warehouse slab.

For new equipment with heavier contact pressures, deep foundations will be required. Depending on the ceiling clearance in the warehouse, we expect that micropiles, installed using low headroom equipment, may be required for support of the new equipment and tanks located within the existing warehouse. For preliminary planning purposes, we expect that an 8-inch diameter micropile with a 125-foot length will have an allowable capacity of about 100-tons. This assumes that the micropile is installed using Type B construction.

5.4 Floor Slabs

Based on the test borings and soil laboratory tests, the surface soils at the site consist of existing fills with various amounts of concrete rubble and slag. The existing fill soils are not considered suitable for support of the floor slabs. Additionally, the steel slag at the site may be susceptible to expansion when exposed to water. Therefore, we recommend that all new floor slabs be designed as structural

slabs supported by the deep foundations. A crawl space of at least 2-feet should be left open beneath the floor slabs to compensate for any change in soil volume due to the expansion of the steel slag within the existing fill soils.

5.5 Below Grade Walls

Below grade walls are planned for some of the new equipment pits. These walls must be designed to resist lateral earth pressures. Backfill soils against the walls should be placed as engineered fill and compacted as described in Section 6.2. The walls and floor slabs do not need to be designed to resist hydrostatic pressures, if the subdrainage system is installed.

5.6 Subdrainage

Based on our water level observations during drilling of the test borings, we expect that the hydrostatic groundwater level at the site is about 8.5-feet below the existing site grades (EL 2.5). Thus, we recommend that any equipment pads or slabs placed more than 4-feet below the existing site grades include an underfloor subdrainage system to relieve any possible water pressure and keep water from collecting on the subgrade soils. A vertical drainage system should also be installed against all below grade walls to avoid hydrostatic build-up of water pressure. Walls constructed more than 4-feet below the existing site grades should be waterproofed.

The interior and exterior drainage system should be separate and be pumped into storm drains, if allowed. The final design of the project must carefully consider the subdrainage system to account for any groundwater surrounding the below grade structures.

5.7 Seismic Design

Based on the test boring data, soil laboratory tests, and our understanding of the 2003 Edition of the International Building Code, we recommend a seismic site classification of Site Class E be used for seismic design. A site class E represents a soft soil profile. The site class was calculated in accordance with Section 1615 of the International Building Code. This classification is estimated from assumed subsurface conditions below the borings to a 100-foot depth and shear wave velocity correlations with the standard penetration tests.

We recommend that a site-specific earthquake ground motion study, including seismic shear wave velocity measurement, be performed at the site. The site-specific study will assess the local site effects, such as amplification of ground motions through the weak soil layers, beyond what is accounted for in the generalized IBC code procedure.

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fill soils should have a liquid limit of less than 40 and a plasticity index less than 20 when tested in accordance with ASTM D-4318. All compacted fill should be placed and compacted to 95% of the maximum dry density per ASTM D-1557, Modified Proctor.

Additional earthwork and subgrade preparation costs should be anticipated if earthwork operations occur during the wetter months. We recommend that earthwork be performed during the summer months to minimize additional costs associated with disturbance of subgrades and drying of fill soils.

7.0 RECOMMENDATIONS FOR ADDITIONAL SERVICES

We welcome the opportunity to assist you and the design team during the planning process to discuss the key geotechnical issues described herein and to provide insight on the geotechnical implications of important planning decisions.

Additional investigations and a comprehensive geotechnical engineering analysis are recommended and should be based on the specific project and site data, including the planned equipment locations and expected loads. The investigation should include additional test borings, in-situ testing, a site specific seismic evaluation, additional soil and slag laboratory testing, and other investigation measures at the locations of the proposed structures, once the site development plan and structure locations and loads are established.

An investigation of the subsurface conditions and foundations below the existing warehouse should be performed. This investigation should consist of concrete cores and test pits excavated to expose the slab subgrades and warehouse foundations. An analysis should be performed to determine if the existing structure is suitable to support the new equipment loads.

A comprehensive geotechnical engineering analysis and report should include an evaluation of the foundation support requirements considering final grades and loads; and lateral earth pressures, subdrainage, floor slab, seismic study, and retaining wall recommendations; considering the final site layout, grades, and structural loads.

8.0 GENERAL AND LIMITATIONS

The analysis and recommendations submitted in this report are based on data obtained from widely spaced test borings with limited structural information and without detailed grading plans. This report should be used to prepare site development plans and should not be considered adequate to determine subsurface conditions, groundwater elevations, and specific foundation support recommendations. A more comprehensive geotechnical engineering report prepared during future design phases should provide the required geotechnical analysis and recommendations necessary for final site and foundation design.

This report does not reflect any conditions that may occur at other portions of the site. The nature and extent of variations may not become evident until during the course of construction. We strongly recommend that the same geotechnical firm who performs the geotechnical studies be retained to monitor the construction to ascertain if a reevaluation of the geotechnical recommendations must be made.

We have prepared this report for the use of your office and the design professionals for preliminary planning purposes. We have endeavored to provide the professional services as reported herein in accordance with generally accepted geotechnical engineering practices and make no warranties, either express or implied, as to the professional services provided under the terms of this agreement and included in this report.

We appreciate the opportunity to be of service to you for this phase of this project. We look forward to providing any requested additional geotechnical consulting services for this project. We trust that we served your needs and expectations. If you have any questions regarding this study or need additional information, please feel free to call us.

Sincerely,

SCHNABEL ENGINEERING NORTH, LLC

DAVID LEE CARPENTER
No. 23765

David L. Carpenter, P.E.
Project Engineer

No. 16595

Kenneth E. Derrenbacher, P.E.
Senior Associate

APPENDIX A:	Identification of Soils Summary of Soil Laboratory Test Results Gradation Curves X-ray Diffraction Analysis Results (2 sheets)
APPENDIX C:	Subsurface Investigation Procedures General Notes for Boring Logs Test Boring Logs (4 sheets) Test Boring Location Plan

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APPENDIX A

Soil Laboratory Testing
Identification of Soils
Summary of Soil Laboratory Tests
Gradation Curves
X-ray Diffraction Analysis Results (2 sheet)

SCHNABEL ENGINEERING NORTH, LLC
Consulting Geotechnical Engineers
IDENTIFICATION OF SOIL

I. DEFINITION OF SOIL GROUP NAMES

	ASTM D2487		Symbol	Group Name
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels - More than 50% of coarse fraction retained on No. 4 sieve Coarse, ¾ to 3" Fine, No. 4 to ¾"	Clean Gravels Less than 5% fines	GW	Well graded gravel
			GP	Poorly graded gravel
		Gravels with Fines More than 12% fines	GM	Silty gravel
			GC	Clayey gravel
	Sands - 50% or more of coarse fraction passes No. 4 sieve Coarse, No. 10 to No. 4 Medium, No. 40 to No. 10 Fine, No. 200 to No. 40	Clean Sands Less than 5% fines	SW	Well graded sand
			SP	Poorly graded sand
		Sands with Fines More than 12% fines	SM	Silty sand
			SC	Clayey sand
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays - Liquid Limit less than 50 Low to medium plasticity	Inorganic	CL	Lean clay
			ML	Silt
		Organic		Organic clay
			OL	Organic silt
	Silts and Clays - Liquid Limit 50 or more Medium to high plasticity	Inorganic	CH	Fat clay
			MH	Elastic silt
		Organic		Organic clay
			OH	Organic silt
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor		PT	Peat

II. DEFINITION OF MINOR COMPONENT PROPORTIONS

Minor Component Adjective Form	Approximate Percentage of Fraction by Weight
Gravelly, Sandy	30% or more coarse grained
With Sand, Gravel Silt, Clay	15% or more coarse grained 5% to 12% fine grained
Trace Sand, Gravel Silt, Clay	Less than 15% coarse grained Less than 5% fine grained
Contains	Indicates presence only

III. GLOSSARY OF MISCELLANEOUS TERMS

SYMBOLS:	Unified Soil Classification Symbols are shown above as group symbols. Use A Line Chart for laboratory identification. Dual symbols are used for borderline classifications.
BOULDERS & COBBLES:	Boulders are considered rounded pieces of rock larger than 12 inches, while cobbles range from 3 to 12 inch size.
DISINTEGRATED ROCK:	Residual rock material with Standard Penetration Resistance (SPT) of more than 60 blows per foot, and less than refusal. Refusal is defined as a SPT of 100 blows for 2" or less penetration.
ROCK FRAGMENTS:	Angular pieces of rock, distinguished from transported gravel, which have separated from original vein or strata and are present in a soil matrix.
QUARTZ:	A hard silica mineral often found in residual soils.
IRONITE:	Iron oxide deposited within a soil layer forming cemented deposits.
CEMENTED SAND:	Usually localized rock-like deposits within a soil stratum composed of sand grains cemented by calcium carbonate or other materials.
MICA:	A soft plate of silica mineral found in many rocks, and in residual or transported soil derived therefrom.
ORGANIC MATERIALS (Excluding Peat):	Topsoil - Surface soils that support plant life and which contain considerable amounts of organic matter; Organic Matter - Soil containing organic colloids throughout its structure; Lignite - Hard, brittle decomposed organic matter with low fixed carbon content (a low grade of coal).
FILL:	Man-made deposit containing soil, rock and often foreign matter.
PROBABLE FILL:	Soils which contain no visually detected foreign matter but which are suspect with regard to origin.
LENSES:	0 to 2 inch seam of minor soil component.
LAYERS:	2 to 12 inch seam of minor soil component.
POCKET:	Discontinuous body of minor soil component.
COLOR SHADES:	Light to dark to indicate substantial difference in color.
MOISTURE CONDITIONS:	Wet, moist, or dry to indicate visual appearance of specimen.

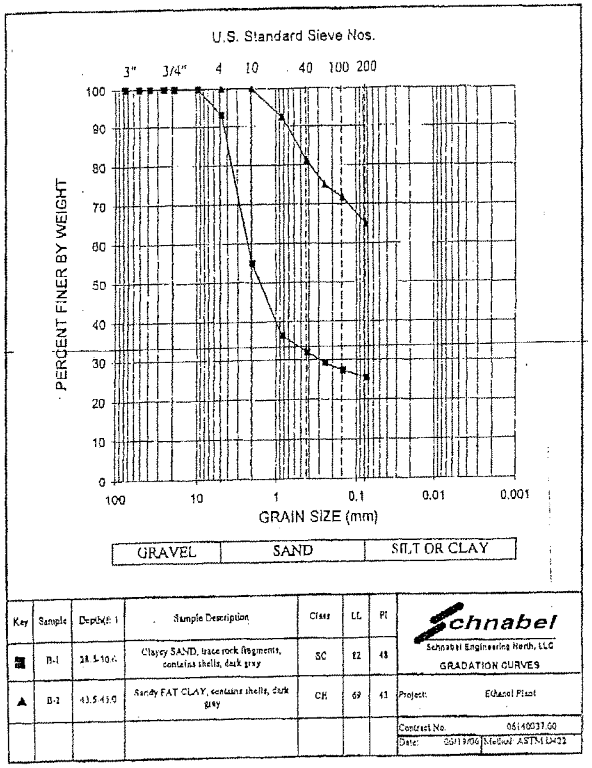
Contract Number: 06140037.00
Project Name: Ethanol Plant

SUMMARY OF SOIL LABORATORY TEST RESULTS

BORING NO.	DEPTH (ft.)	STRATUM	DESCRIPTION OF SOIL SPECIMEN	SAMPLE CLASS.	SIEVE RESULTS		ATTERBERG LIMITS			NATURAL MOISTURE (%)
					PERCENT PASSING NO.200	PERCENT RETAINED NO.4	LL	PL	PI	
B-1	28.5-30.0	A	Clayey SAND, trace rock fragments, contains shells, dark gray	SC	25.5	6.9	82	34	48	37.6
B-2	43.5-45.0	B	Sandy FAT CLAY, contains shells, dark gray	CH	64.8	0.0	69	26	43	43.6

NOTES:

1. Soil tests are in accordance with applicable ASTM standards
2. Soil classification symbols are in accordance with Unified soil classification system, based on testing indicated and visual identification.
3. Visual identification of samples is in accordance with the system used by the firm.
4. Key to abbreviation: LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; NP = Nonplastic



Key	Sample	Depth(ft)	Sample Description	Class	LL	PI
■	B-1	38.5-40.0	Clayey SAND, trace rock fragments, contains shells, dark gray	SC	82	48
▲	B-2	43.5-45.0	Sandy FAT CLAY, contains shells, dark gray	CH	69	43

Schnabel Engineering North, LLC
GRADATION CURVES
Project: Ethanol Plant
Contract No. 05140037.00
Date: 05/19/06 Method: ASTM D422

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Client: **Schnabel Engineering**
Project: **Steel Slag**

Contact: **Dave Carpenter**
Submitter: **Chad Mayers**
Date Received: **6/20/06**

CTLGroup Project No.: 058507
CTLGroup Project Mgr: Ann Hagni
Analyst: Ann Hagni
Approved: Peter Taylor
Date Analyzed: 6/21/06
Date Reported: 6/21/06

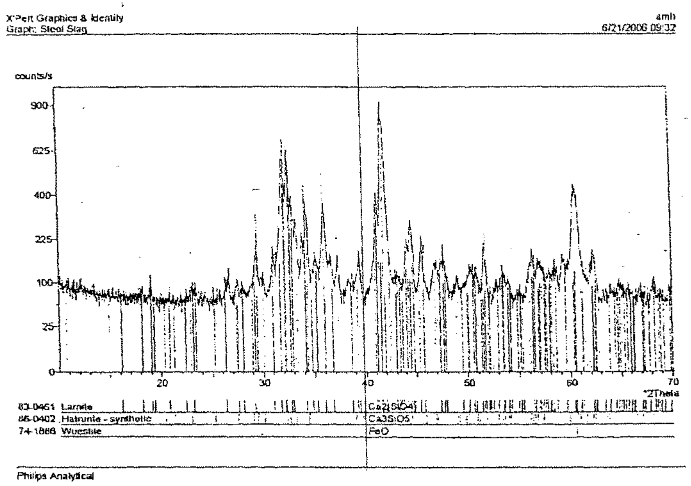
X-RAY DIFFRACTION (XRD) ANALYSIS

One sample identified as "B1/B2 Slag (06140037.00 Ethanol Plant)" was submitted for XRD analysis. The submitted sample was crushed to pass a No. 325 sieve (< 45 µm) and analyzed as a packed powder mounted on an aluminum sample holder.

Analysis was conducted using a Philips PW 1720 X-ray diffractometer (Cu K α) equipped with θ-compensating slit, graphite monochromator, gas proportional counter detector, and Philips electronics and search/match software. The sample was scanned from 10 to 70° 2θ at 1° 2θ per minute. Crystalline components detected are indicated below (also refer to the attached diffractogram). Approximate abundances are indicated as estimates.

Phase	Chemical Formula	B1/B2 Slag
Larnite	Ca_2SiO_4	Major
Wuestite	FeO	Minor
Hatruite, synthetic	Ca_3SiO_5	Possible (Minor)
Amorphous	(non-crystalline)	Possible (Minor)

Abundance Key
Major = 20-100%
Minor = 5-20%
Trace = < 5%


X'Pert Graphics & Identity
Graph: Steel Slag
amh
6/21/2006 09:32
counts/s
900
625
400
225
100
25
0
20
30
40
50
60
70
°2Theta
83-0461 Larnite
Ca2(SiO4)
86-0402 Hatrunite - synthetic
Ca3SiO5
74-1886 Wuestite
FeO
Philips Analytical

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APPENDIX B

Subsurface Investigation Procedures
General Notes for Boring Logs
Test Boring Logs (4 sheets)
Test Boring Location Plan

SUBSURFACE INVESTIGATION PROCEDURES

1. Test Borings

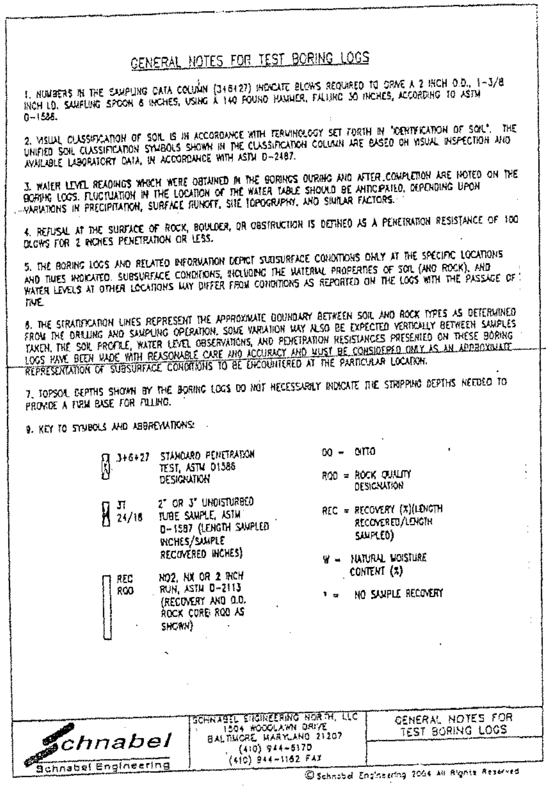
The borings are advanced by turning an auger with a center opening of 3-1/4 inches. Cuttings are brought to the surface by the auger flights. Sampling is performed through the center opening in the hollow stem auger by standard methods. Water and revert drilling fluid was added to the augers where noted on the boring logs. The water and revert was added to minimize hydrostatic water differences inside and outside the augers.

2. Standard Penetration Tests

Testing is performed by driving a 2-inch O.D., 1-3/8 inch I.D., sampling spoon through three, 6-inch intervals or as indicated, using a 140-pound, automatically tripped hammer falling 30 inches, according to ASTM D-1586. N values indicate the penetration resistance in blows per foot of the sampling spoon. After the initial 6 inches to assure the sampler is in undisturbed material, the number of blows required to drive the sampler the final 12 inches is taken as the N value. The sampler is driven to a total penetration resistance of 100 blows or 18 inches, whichever occurs first.

3. Boring Locations and Grades

The borings locations were staked by a representative of Daft McCune Walker, Inc. The test boring locations were then offset by a representative of Schnabel Engineering to avoid existing structures and rubble stockpiles. Test boring locations should be considered accurate to within about 5-feet. Boring elevations were estimated from the contours included on the site plan provided to us by Daft McCune Walker, Inc. These elevations should be considered accurate to within ±2 feet.



GENERAL NOTES FOR TEST BORING LOGS

1. NUMBERS IN THE SAMPLING DATA COLUMN (3+6+27) INDICATE BLOWS REQUIRED TO DRIVE A 2 INCH O.D., 1-3/8 INCH I.D. SAMPLING SPOON 6 INCHES, USING A 140 POUND HAMMER, FALLING 30 INCHES, ACCORDING TO ASTM D-1586.

2. VISUAL CLASSIFICATION OF SOIL IS IN ACCORDANCE WITH TERMINOLOGY SET FORTH IN "IDENTIFICATION OF SOIL". THE UNIFIED SOIL CLASSIFICATION SYMBOLS SHOWN IN THE CLASSIFICATION COLUMN ARE BASED ON VISUAL INSPECTION AND AVAILABLE LABORATORY DATA, IN ACCORDANCE WITH ASTM D-2487.

3. WATER LEVEL READINGS WHICH WERE OBTAINED IN THE BORINGS DURING AND AFTER COMPLETION ARE NOTED ON THE BORING LOGS. FLUCTUATION IN THE LOCATION OF THE WATER TABLE SHOULD BE ANTICIPATED, DEPENDING UPON VARIATIONS IN PRECIPITATION, SURFACE RUNOFF, SITE TOPOGRAPHY, AND SIMILAR FACTORS.

4. REFUSAL AT THE SURFACE OF ROCK, BOULDER, OR OBSTRUCTION IS DEFINED AS A PENETRATION RESISTANCE OF 100 BLOWS FOR 2 INCHES PENETRATION OR LESS.

5. THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND TIMES INDICATED. SUBSURFACE CONDITIONS, INCLUDING THE MATERIAL PROPERTIES OF SOIL (AND ROCK), AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS AS REPORTED ON THE LOGS WITH THE PASSAGE OF TIME.

6. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL AND ROCK TYPES AS DETERMINED FROM THE DRILLING AND SAMPLING OPERATION. SOME VARIATION MAY ALSO BE EXPECTED VERTICALLY BETWEEN SAMPLES TAKEN. THE SOIL PROFILE, WATER LEVEL OBSERVATIONS, AND PENETRATION RESISTANCES PRESENTED ON THESE BORING LOGS HAVE BEEN MADE WITH REASONABLE CARE AND ACCURACY AND MUST BE CONSIDERED ONLY AS AN APPROXIMATE REPRESENTATION OF SUBSURFACE CONDITIONS TO BE ENCOUNTERED AT THE PARTICULAR LOCATION.

7. TOPSOIL DEPTHS SHOWN BY THE BORING LOGS DO NOT NECESSARILY INDICATE THE STRIPPING DEPTHS NEEDED TO PROVIDE A FIRM BASE FOR FILLING.

8. KEY TO SYMBOLS AND ABBREVIATIONS:

3+6+27	STANDARD PENETRATION TEST, ASTM D1586 DESIGNATION	DO	DITTO
JT 24/18	2" OR 3" UNDISTURBED TUBE SAMPLE, ASTM D-1587 (LENGTH SAMPLED INCHES/SAMPLE RECOVERED INCHES)	RQD	ROCK QUALITY DESIGNATION
REC RQD	NQ2, NX OR 2 INCH RUN, ASTM D-2113 (RECOVERY AND O.D. ROCK CORE: RQD AS SHOWN)	REC	RECOVERY (%)(LENGTH RECOVERED/LENGTH SAMPLED)
		W	NATURAL MOISTURE CONTENT (%)
		*	NO SAMPLE RECOVERY

Schnabel

Schnabel Engineering

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GENERAL NOTES FOR TEST BORING LOGS

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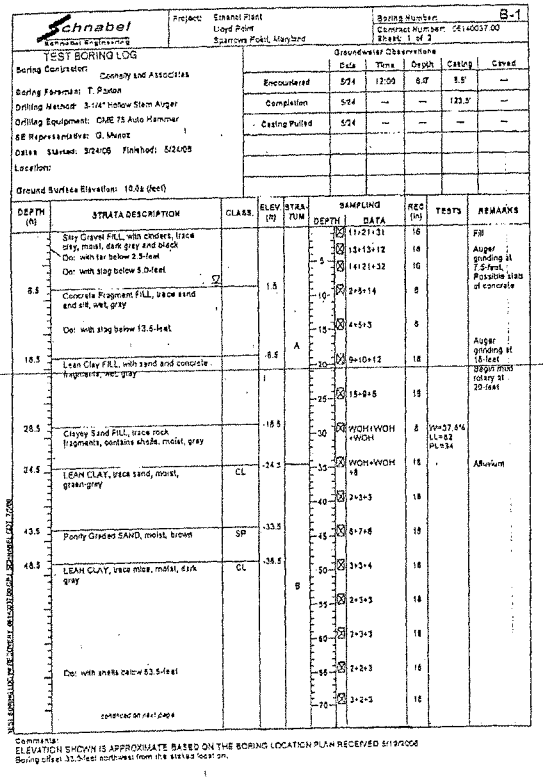


Schnabel Engineering

Project: Sparrows Point LNG Terminal… — Project: Stanasi Plant
Lloyd Point
Sparrows Point, Maryland

Boring Number: B-1
Contract Number: 05140037.00
Sheet: 1 of 2

TEST BORING LOG

Boring Contractor: Connelly and Associates
Boring Foreman: T. Paxton
Drilling Method: 3-1/4" Hollow Stem Auger
Drilling Equipment: CME 75 Auto Hammer
SE Representative: G. Munoz
Dates Started: 5/24/06 Finished: 5/24/06
Location:
Ground Surface Elevation: 10.0± (feet)

Groundwater Observations

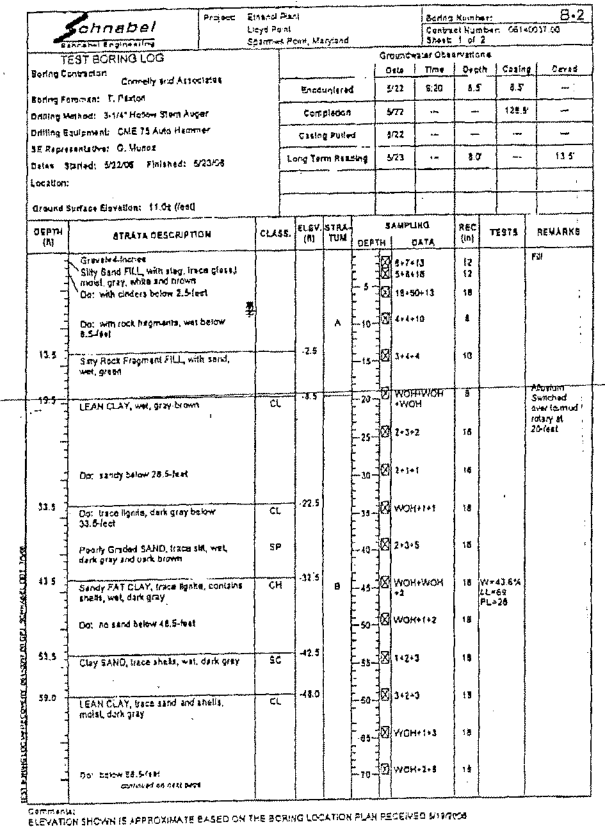
	Date	Time	Depth	Casing	Caved
Encountered	5/24	12:00	8.0'	8.5'	—
Completion	5/24	—	—	123.5'	—
Casing Pulled	5/24	—	—	—	—

DEPTH (ft)	STRATA DESCRIPTION	CLASS.	ELEV. (ft)	STRATUM
	Silty Gravel FILL, with cinders, trace clay, moist, dark grey and black Do: with tar below 2.5-feet Do: with slag below 5.0-feet			A
8.5	Concrete Fragment FILL, trace sand and silt, wet, gray Do: with slag below 13.5-feet		1.5	
18.5	Lean Clay FILL, with sand and concrete fragments, wet, gray		-8.5	
28.5	Clayey Sand FILL, trace rock fragments, contains shells, moist, gray		-18.5	
34.5	LEAN CLAY, trace sand, moist, green-gray	CL	-24.5	B
43.5	Poorly Graded SAND, moist, brown	SP	-33.5	
48.5	LEAN CLAY, trace mica, moist, dark gray Do: with shells below 63.5-feet	CL	-38.5	

continued on next page

SAMPLING DATA	REC (in)	TESTS	REMARKS
11+21+31	16		Fill
13+13+12	18		Auger grinding at 7.5-feet, Possible slab of concrete
14+21+32	10		
2+5+14	8		
4+5+3	6		
9+10+12	18		Auger grinding at 18-feet Begin mud rotary at 20-feet
15+9+5	18		
WOH+WOH+WOH	8	W=37.6% LL=82 PL=34	
WOH+WOH+8	18		Alluvium
2+3+3	18		
5+7+8	18		
3+3+4	18		
2+3+3	18		
2+3+3	18		
2+2+3	18		
3+2+3	18		

Comments:
ELEVATION SHOWN IS APPROXIMATE BASED ON THE BORING LOCATION PLAN RECEIVED 5/19/2006
Boring offset 33.5-feet northwest from the staked location.



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Project: Ethanol Plant
Lloyd Point
Sparrows Point, Maryland

Boring Number: B-2
Contract Number: 06140037.00
Sheet: 1 of 2

TEST BORING LOG

Boring Contractor: Connelly and Associates
Boring Foreman: T. Paxton
Drilling Method: 3-1/4" Hollow Stem Auger
Drilling Equipment: CME 75 Auto Hammer
SE Representative: G. Munoz
Dates Started: 5/22/08 Finished: 5/23/08
Location:
Ground Surface Elevation: 11.0± (feet)

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered	5/22	9:20	8.5'	8.5'	--
Completion	5/22	--	--	128.5'	--
Casing Pulled	5/22	--	--	--	--
Long Term Reading	5/23	--	8.0'	--	13.5'

DEPTH (ft)	STRATA DESCRIPTION	CLASS.	ELEV. (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	REC (in)	TESTS	REMARKS
	Gravel-4-inches Silty Sand FILL, with slag, trace glass, moist, gray, white and brown			A		5+7+13 5+8+18	12 12		Fill
	Do: with cinders below 2.5-feet				5	18+50+13	18		
	Do: with rock fragments, wet below 8.5-feet				10	4+4+10	8		
13.5	Silty Rock Fragment FILL, with sand, wet, green		-2.5		15	3+4+4	10		
19.5	LEAN CLAY, wet, gray-brown	CL	-8.5	B	20	WOH+WOH+WOH	8		Alluvium Switched over to mud rotary at 20-feet
					25	2+3+2	16		
	Do: sandy below 28.5-feet				30	2+1+1	16		
33.5	Do: trace lignite, dark gray below 33.5-feet	CL	-22.5		35	WOH+1+1	18		
	Poorly Graded SAND, trace silt, wet, dark gray and dark brown	SP			40	2+3+5	18		
43.5	Sandy FAT CLAY, trace lignite, contains shells, wet, dark gray	CH	-32.5		45	WOH+WOH+2	18	W=43.6% LL=69 PL=28	
	Do: no sand below 48.5-feet				50	WOH+1+2	18		
53.5	Clay SAND, trace shells, wet, dark gray	SC	-42.5		55	1+2+3	18		
59.0	LEAN CLAY, trace sand and shells, moist, dark gray	CL	-48.0		60	3+2+3	13		
					65	WOH+1+3	18		
	Do: below 68.5-feet continued on next page				70	WOH+2+8	18		

Comments:
ELEVATION SHOWN IS APPROXIMATE BASED ON THE BORING LOCATION PLAN RECEIVED 5/19/2008

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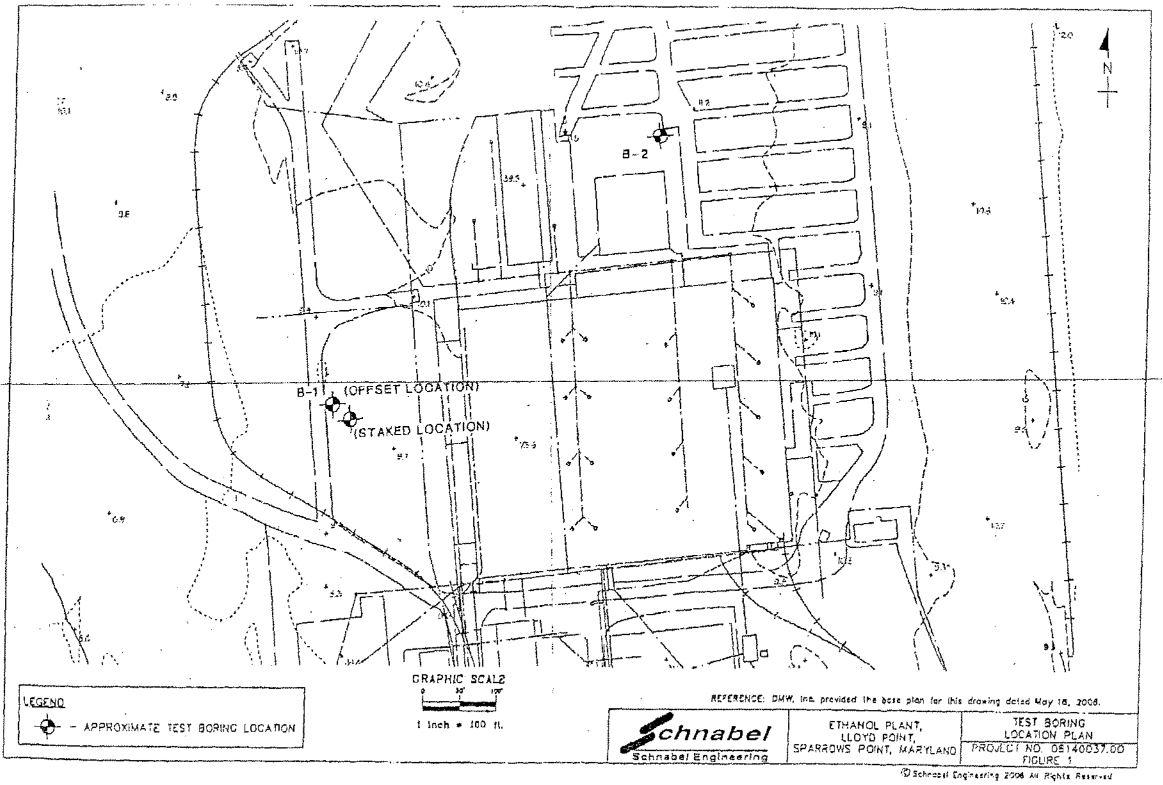
Schnabel Engineering

Project: Ethanol Plant
Lloyd Point
Sparrows Point, Maryland

Boring Number: B-2
Contract Number: 05140037.00
Sheet: 2 of 2

DEPTH (ft)	STRATA DESCRIPTION	CLASS.	ELEV. (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	REC (in)	TESTS	REMARKS
	LEAN CLAY, trace sand and shells, moist, dark gray (continued)	CL							
	Do: with lignite below 73.5-feet				75	2+3+4	18		
					80	4+4+4	18		
					85	3+5+5	18		
				B	90	4+5+5	18		
	Do: brown-gray below 93.5-feet				95	4+5+4	18		
					100	4+4+4	18		
103.5	Poorly Graded SAND, wet, gray	SP	-92.5		105	5+10+13	18		Patapsco Formation
					110	7+9+13	18		
				C	115	9+9+14	18		Rollerbit grinding below 117-feet
118.5	Silty GRAVEL, with sand, wet, brown and gray	GM	-107.5		120	10+14+17	14		
					125	12+17+29	14		
						52+100/6"			
129.5	BOTTOM OF BORING @ 129.5 FT.		-118.5						

Comments:
ELEVATION SHOWN IS APPROXIMATE BASED ON THE BORING LOCATION PLAN RECEIVED 5/19/2006


N
B-2
B-1 (OFFSET LOCATION)
(STAKED LOCATION)
LEGEND
- APPROXIMATE TEST BORING LOCATION
GRAPHIC SCALE
0
50'
100'
1 inch = 100 ft.
REFERENCE: DMW, Inc. provided the base plan for this drawing dated May 16, 2006.
Schnabel
Schnabel Engineering
ETHANOL PLANT,
LLOYD POINT,
SPARROWS POINT, MARYLAND
TEST BORING
LOCATION PLAN
PROJECT NO. 06140037.00
FIGURE 1
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3. ENVIRONMENTAL IMPACT OF PIPELINE CORRIDOR:
(Mid-Atlantic Express, LLC)

* Reference: FERC PROPOSED ROUTE MAP
JUNE 1, 2006

** NOTE: THE PROPOSED ROUTE IMPACTS THE FOLLOWING: **

- 99 Waterbody Crossings
- 9 Wetland Areas
- 6 Critical Areas
- 13 Department of Natural Resources (DNR) Sensitive Areas
- 1 Maryland Historical Site
- 3 Maryland State Parks
- 50 Pennsylvania Historical Sites
- Approximately 1700 Residential Properties
- 16 Major DNR Areas in Both Maryland and Pennsylvania
- 3 Agricultural Land Preservation Areas
- 2 Rural Legacy Areas
- 2 Environmental Trust Easements

4. SAFETY AND RISK OF LNG PROJECT CONVENTIONAL AND NON CONVENTIONAL:

* FACT: State of Maryland has determined that the LNG Facility Project is within 0.9 miles from a Residential Area, NOT 1.2 miles as stated and submitted by AES.

* FACT: Approximately 3000 workers are employed by International Steel Group (ISG)/Mittal Steel at 1362 feet In distance from the proposed AES Sparrows Point LNG, LLC Facility

* FACT: The Routes of Egress from the Communities surrounding The Proposed AES Project are "INSUFFICIENT in the Case of an Emergency Response Evacuation" Also, in The Case of an Emergency, there are not enough Response Teams, Equipment and Personnel to handle this given Scenario (State of Maryland Homeland Security, Spokesman Richard Muth)

* Terrorist Threat Target
MODEL: Explosive Calculations Based on Nuclear Equivalent

** NOTE: In a WORST CASE SCENARIO if a Terrorist by ANY ** MEANS placed one 0.5 Kiloton Nuclear Device on a LNG Tanker a 528 Kiloton Kinetic Result WOULD OCCUR this Model is for the Ship ALONE. The model does not include the Resultant Cascade Effect.

* Department of Housing and Urban Development (HUD) Acceptable Safe Distance (ASD) Regulations concerning Specific Hazardous Substances (Appendix I to Subpart C to part 51)

* FACT: The United States Coast Guard (USCG) at Norfolk has WITHDRAWN its LNG Escort for LNG Tankers, this Leaves these ships defenseless in Open Water and in Port.

Explosive Calculations based on Nuclear Equivalent

The idea of comparing the explosion of a LNG tanker to the effects of a nuclear blast is an inconsistent match. Nuclear explosions contain many elements that LNG can not create. Still, I will give you my estimates based on the explosion. Information I have here on hand. These estimates are not cold facts. They are however derived from factual materials provided by the US Army. They are not classified at any leave and in these days of 911 may be considered sensitive.

Fact: Little Boy, the nuclear weapon used to attack Hiroshima in 1945, was rated at 12 K-TONs of TNT. That is the blast and effects were initiated by an explosion equivalent to 12,000 tons of TNT.

Fact: The effects of the nuclear device were generated from an air burst. The blast from a tanker ship would be considered a ground burst for the blast effects, this would reduce the overall effect because some energy would be spent in making the crater.

Fact: The airborne natural gas, when exploded, would act more like a fuel-air explosion then a nuclear explosion. This means that the cause of the fire is different, but the net affects are roughly the same. A fuel-air explosion tends to ignite flammables or burn anything in the general areas of the fuel (including the insides of people's lungs if breathed).

Please Note: The calculations in the nuclear section assume that an explosion of LNG could be obtained within enough containment to release all of the potential energy at once in a confined enough area to cause a concentrated blast. Since this would be extremely difficult in a LNG storage facility that is super cooled, the likelihood of an explosive event equaling a nuclear blast is small. I will address the more likely event of a fuel-air explosion after I finish with the nuclear section of this calculation.

Now for the calculations:

Nuclear Explosion

The LGN tanker holds 33 Million gallons of LNG – which the move equated to 55 times the Hiroshima blast. That's an explosive yield of 660 K-TONs when blown all at once. I believe that a random attack on a ship would cause a cascade of sorts between the various LNG holds. The cascade would reduce the explosive power by a small margin, perhaps 10%, but has the possibility of reinforcing the blast wave from the surge of each explosion. But, for the purposes of this calculation, I will assume that all of the LNG ignites either at once or close enough to the same time as to limit the loss of energy.

That's a 660 K-TON explosion. Now, the normal nuclear event would break its energy down into 5 categories. I'll address each of these and then sum up.

1. Electro-Magnetic Pulse. The effects of an electro-magnetic pulse (EMP) will destroy electronics. In fact, a blast of a large nuclear warhead at several miles over the city of Baltimore would destroy a large percentage of electronics. Only electronics in hardened defenses would survive. LNG will not produce an EMP. Since a nuclear device will use about 1% of its energy in this activity, there is only a little gain in the blast effect.

2. Initial Nuclear Radiation: Since this form of energy is related to a nuclear event, I don't think it will be a focus of any energy in a LNG event. The energy spent by a nuclear device in this category is 4%.

3. Residual Nuclear Radiation: Since this form of energy is related to a nuclear event, I don't think it will be a focus of any energy in a LNG event. The energy spent by a nuclear device in this category is 10%.

4. Thermal Radiation: The LNG event should have a thermal component. I believe, given the nature of the materials, that the energy not used in nuclear radiation production will be directed into the formation of thermal radiation. Also, the energy used to create an EMP would probably be focused on the production of heat and thermal radiation. Given this assumption, 50% or the energy expended in the explosion would be used in the fireball and thermal radiation. Since an LNG event is a ground level occurrence, 20% of the thermal energy would be used to create a depression in the immediate area beneath, probably water in this case.

5. Blast: A nuclear device would normally use 50% of its energy to produce blast energy. The blast causes a brief (normally a small portion of a second) but rapid movements of air away from the center of the center of the event – ie. an explosion. This is characterized by sharp increases in pressure and strong winds. Since an LNG event is a ground level occurrence, 20% of the blast energy would be used to create a depression in the immediate area beneath, probably water in this case.

The result is 80% of the energy in each of the thermal and blast categories. We can reduce the K-TON amount to 528 K-TONs.

The nuclear energy ratios and calculations are based on a reaction that occurs in a simultaneous fashion. That is, the molecules in the fissionable or fusion materials interact over a small (perhaps nanosecond or less) time frame to cause an explosion. LNG may not react quite as fast. Still, the resulting energy release will be massive.

Damage occurs in both the blast and the thermal portions of the event.

Blast: The blast produces a wind that carries with it a pressure change at its leading edge and a massive amount of vacuum with it in the trailing. The forward edge of the wind will move at 7 to 8 times the speed of sound, but quickly decrease to about the speed of sound. Static over pressure damage occurs at the very leading edge of the wind; the amount of psi change is determined by the energy in the blast. Dynamic pressure (wind from the vacuum) will occur in the area trailing the initial edge. The results of both damage producing pressures will occur in 2 to 3 minutes with the initial edge damage happening in only a few seconds.

The initial edge of the blast wave will cause an over pressure of about 30 psi. The edge will carry for about 1.18 miles in all directions before dissipating. The distance may vary a little bit by the materials and terrain covered (more buildings, hills, etc will cause the wave to dissipate faster. The effects will easily destroy most buildings – including multi-story, steel and concrete constructions. It will crush vehicles. It will cause basements and non-reinforced holes to fill-in. This will happen in a mater of seconds.

The wind following up the initial pulse will continue beyond the damaging limits of the initial pulse to a distance of about 3.07 miles. The psi that would carry forward and slowly lessen over distance would start at 19 psi and reduce to normal. The wind speed would begin at 363 miles per hour and reduce from there. While 19 psi would still be enough to crush vehicles and destroy buildings, the main threat in dynamic pressure is the material dragged by the winds. These items become missiles that will penetrate most intervening materials (especially at over 360 miles an hour). The dangers of dynamic pressures will persist throughout the 3.07 mile radius from the explosion.

The damage to material and buildings within the area would range from complete destruction in the 1.18 mile radius to nearly complete destruction just outside of that radius to about 50% in the areas toward the outer radius (3.07 miles). If a person were walking down the street in the open, that person may experience damage at 10 miles away. Windows would certainly shatter out to that distance…

Thermal: Thermal effects are dependent upon the length of time of the pulse and the intensity of the pulse. The thermal effects in a pulse may not be as bad with an LNG explosion, but the fuel-air effects will be quite severe. However, to maintain the calculation, the time to obtain the most intense thermal pulse from a 528 K-TON event is .70 seconds. The range of the thermal pulse is longer than that for the blast. For the event we are talking about, I'd estimate a 10 mile effect. The damage occurring will include fires of all types, including buildings and forest. Also, there will be ignition of exposed infrastructure fuels such as gasoline and other natural gas sources – especially those exposed by the blast wave. This would include the land-based storage tanks most likely ruptured or destroyed by the initial blast.

While this is a startling estimate – remember that it is not likely to happen. The more likely scenario is a LNG tank rupture resulting in a leak of the LNG becoming immediately airborne natural gas. I will outline the effects of an fuel-air explosion in the following.

Air-Fuel Explosion

The fuel-air explosion (FAE) option is not much better. I have happened upon a Housing and Urban Department (HUD) regulation that explain their idea of the Acceptable Safe Distance (ASD) of people and buildings from a hazardous material containment facility. I have enclosed the document for your use, but will provide below the calculations for the ASDs of building and people from the type of materials concerned; I think you will find this section VERY INTERESTING.

The document requires that you have the Adobe reader – a free version is available on the WEB at the Adobe site.

The acceptable burn rate for an explosion is 10,000 BTU/sq. ft. per hr. and for people is much lower 450 BTU/sq. ft. per hr. These rates will enable emergency services enough time to arrive and put the fire out before significant damage or allow a human to escape (run away) from the source. The calculations presented in the HUD regulation are very accurate and based on military and two independent studies.

Now for the good part: There are several easy-to-use charts in the regulation that shed a lot of light on our situation. First, if you look in the materials considered as hazardous for these calculations, LNG is there, so these apply. The HUD regulation shows an example with 30000 gallons of stored material. We are dealing with 33000000 gallons on one ship! The charts go only to 1000000 gallons, but I'll use the formula provided to estimate the ASD at 33 million gallons.

The first chart is for blast without barriers in place. The example shows 30000 gallons would require an ASD of 660 feet between it and the nearest building. From the chart, 1000000 gallons would require about 2200 feet. Since the curve flattens out over an increasingly exponential chart, but the slope is constant, I'd estimate 10000000 at about 4200 feet and 30000000 at about 5300 feet – Or the 1 mile range that is suggested by AES.

BUT the blast is the lesser of the problems with a FAE explosion. The next two charts talk about the fireball width and damage from it. This is the BIG PROBLEM.

The fireball width calculation is 2 times the square root of the material volume in gallons. This leads to the following calculation:

2*SQR(33000000) feet

That's 11489 feet! That puts the fireball at a width of 2.17 miles.

As mentioned earlier, there are two areas to consider – Human (450 BTU/sq. ft.) and Buildings (10000 BTU/sq. ft.). The instruction on the next chart, the ASD chart, states that you take the longer of the two distances into consideration when determining the ASD – this is normally to protect human life. The chart goes to a fireball width of 10000 feet (less then ours by over 1000 feet). At 10000 feet, the ASD for humans is OFF THE CHART, but I estimate it to be 12000 to 13000 foot ASD for human exposure and a 5500 foot ASD for buildings (over 1 mile). Since our fireball would grow to 11489 feet, I'd estimate the ASD for humans at 12500 to 13500 feet (2.37 miles to 2.56 miles) and an ASD for buildings at 6250 to 6500 feet (1.18 miles to 1.23 miles). Remember, we use the larger of the two figures – so in this case the regulation would require an ASD of 2.5 miles; Not the 1.0 mile offered by AES.

I hope this helps. Good luck with you presentation.

PS> There is a simulation software package called BREEZE that is commercially available. It is used to simulate the results of all sorts of explosive materials.

(1) The allowable thermal radiation flux level at the building shall not exceed 10,000 BTU/sq. ft. per hr.;

(2) The allowable thermal radiation flux level for outdoor, unprotected facilities or areas of congregation shall not exceed 450 BTU/sq. ft. per hour.

(b) *Blast Overpressure Safety Standard.* Projects shall be located so that the maximum allowable blast overpressure at both buildings and outdoor, unprotected facilities or areas shall not exceed 0.5 psi.

(c) If a hazardous substance constitutes both a thermal radiation and blast overpressure hazard, the ASD for each hazard shall be calculated, and the larger of the two ASDs shall be used to determine compliance with this subpart.

(d) Background information on the standards and the logarithmic thermal radiation and blast overpressure charts that provide assistance in determining acceptable separation distances are contained in appendix II to this subpart C.

[49 FR 5103, Feb. 10, 1984, as amended at 61 FR 13334, Mar. 26, 1996]

§ 51.204 HUD-assisted hazardous facilities.

In reviewing applications for proposed HUD-assisted projects involving the installation of hazardous facilities, the Department shall ensure that such hazardous facilities are located at an acceptable separation distance from residences and from any other facility or area where people may congregate or be present. The mitigating measures listed in § 51.205 may be taken into account in determining compliance with this section.

§ 51.205 Mitigating measures.

Application of the standards for determining an Acceptable Separation Distance (ASD) for a HUD-assisted project from a potential hazard of an explosion or fire prone nature is predicated on level topography with no intervening object(s) between the hazard and the project. Application of the standards can be eliminated or modified if:

(a) The nature of the topography shields the proposed project from the hazard.

(b) An existing permanent fire resistant structure of adequate size and strength will shield the proposed project from the hazard.

(c) A barrier is constructed surrounding the hazard, at the site of the project, or in between the potential hazard and the proposed project.

(d) The structure and outdoor areas used by people are designed to withstand blast overpressure and thermal radiation anticipated from the potential hazard (e.g., the project is of masonry and steel or reinforced concrete and steel construction).

§ 51.206 Implementation.

This subpart C shall be implemented for each proposed HUD-assisted project by the HUD approving official or responsible entity responsible for review of the project. The implementation procedure will be part of the environmental review process in accordance with the procedures set forth in 24 CFR parts 50 and 58.

[61 FR 13334, Mar. 26, 1996]

§ 51.207 Special circumstances.

The Secretary or the Secretary's designee may, on a case-by-case basis, when circumstances warrant, require the application of this subpart C with respect to a substance not listed in appendix I to this subpart C that would create thermal or overpressure effect in excess of that listed in § 51.203.

[61 FR 13334, Mar. 26, 1996]

§ 51.208 Reservation of administrative and legal rights.

Publication of these standards does not constitute a waiver of any right: (a) Of HUD to disapprove a project proposal if the siting is too close to a potential hazard not covered by this subpart, and (b) of HUD or any person or other entity to seek to abate or to collect damages occasioned by a nuisance, whether or not covered by the subpart.

APPENDIX I TO SUBPART C TO PART 51—SPECIFIC HAZARDOUS SUBSTANCES

The following is a list of specific petroleum products and chemicals defined to be hazardous substances under § 51.201.

HAZARDOUS LIQUIDS

Acetic Acid
Acetic Anhydride
Acetone
Acrylonitrile
Amyl Acetate
Amyl Alcohol
Benzene
Butyl Acetate
Butyl Acrylate
Butyl Alcohol
Carbon Bisulfide
Carbon Disulfide
Cellosolve
Cresols
Crude Oil
(Petroleum)
Cumene
Cyclohexane
No. 2 Diesel Fuel
Ethyl Acetate
Ethyl Acrylate
Ethyl Alcohol
Ethyl Benzene
Ethyl Dichloride
Ethyl Ether
Gasoline
Heptane
Hexane
Isobutyl Acetate
Isobutyl Alcohol
Isopropyl Acetate
Isopropyl Alcohol
Jet Fuel and
Kerosene
Methyl Alcohol
Methyl Amyl Alcohol
Methyl Cellosolve
Methyl Ethyl Ketone
Naptha
Pentane
Propylene Oxide
Toluene
Vinyl Acetate
Xylene

HAZARDOUS GASES

Acetaldehyde
Butadiene
Butane
Ethene
Ethylene
Ethylene Oxide
Hydrogen
Liquefied Natural
Gas (LNG)
Liquefied Petroleum
Gas (LPG)
Propane
Propylene
Vinyl Chloride

(Primary Source: "Urban Development Siting with respect to Hazardous Commercial/Industrial Facilities," by Rolf Jensen and Associates, Inc., April 1982)

[49 FR 5105, Feb. 10, 1984; 49 FR 12214, Mar. 29, 1984]

APPENDIX II TO SUBPART C TO PART 51—DEVELOPMENT OF STANDARDS; CALCULATION METHODS

I. Background Information Concerning the Standards

(a) Thermal Radiation:

(1) *Introduction.* Flammable products stored in above ground containers represent a definite, potential threat to human life and structures in the event of fire. The resulting fireball emits thermal radiation which is absorbed by the surroundings. Combustible structures, such as wooden houses, may be ignited by the thermal radiation being emitted. The radiation can cause severe burn, injuries and even death to exposed persons some distance away from the site of the fire.

(2) *Criteria for Acceptable Separation Distance (ASD).* Wooden buildings, window drapes and trees generally ignite spontaneously when exposed for a relatively long period of time to thermal radiation levels of approximately 10,000 Btu/hr. sq. ft. It will take 15 to 20 minutes for a building to ignite at that degree of thermal intensity. Since the reasonable response time for fire fighting units in urbanized areas is approximately five to ten minutes, a standard of 10,000 BTU/hr. sq. ft. is considered an acceptable level of thermal radiation for buildings.

People in outdoor areas exposed to a thermal radiation flux level of approximately 1,500 Btu/ft^2 hr will suffer intolerable pain after 15 seconds. Longer exposure causes blistering, permanent skin damage, and even death. Since it is assumed that children and the elderly could not take refuge behind walls or run away from the thermal effect of the fire within the 15 seconds before skin blistering occurs, unprotected (outdoor) areas, such as playgrounds, parks, yards, school grounds, etc., must be placed at such a distance from potential fire locations so that the radiation flux level is well below 1500 Btu/ft^2 hr. An acceptable flux level, particularly for elderly people and children, is 450 Btu/ft^2 hr. The skin can be exposed to this degree of thermal radiation for 3 minutes or longer with no serious detrimental effect. The result would be the same as a bad sunburn. Therefore, the standard for areas in which there will be exposed people, e.g. outdoor recreation areas such as playgrounds and parks, is set at 450 Btu/hr. sq. ft. Areas covered also include open space ancillary to residential structures, such as yard areas and vehicle parking areas.

(3) *Acceptable Separation Distance From a Potential Fire Hazard.* This is the actual setback required for the safety of occupied buildings and their inhabitants, and people in open spaces (exposed areas) from a potential fire hazard. The specific distance required for safety from such a hazard depends upon the nature and the volume of the substance. The Technical Guidebook entitled "Urban Development Siting With Respect to Hazardous/Commercial Industrial Facilities," which supplements this regulation, contains the technical guidance required to compute Acceptable Separation Distances (ASD) for those flammable substances most often encountered.

(b) *Blast Overpressure:*

The Acceptable Separation Distance (ASD) for people and structures from materials prone to explosion is dependent upon the resultant blast measured in pounds per square inch (psi) overpressure. It has been determined by the military and corroborated by two independent studies conducted for the Department of Housing and Urban Development that 0.5 psi is the acceptable level of blast overpressure for both buildings and occupants, because a frame structure can normally withstand that level of external exertion with no serious structural damage, and it is unlikely that human beings inside the building would normally suffer any serious injury. Using this as the safety standard for blast overpressure, nomographs have been developed from which an ASD can be determined for a given quantify of hazardous substance. These nomographs are contained in the handbook with detailed instructions on their use.

(c) *Hazard evaluation:*

The Acceptable Separation Distances for buildings, which are determined for thermal radiation and blast overpressure, delineate separate identifiable danger zones for each potential accident source. For some materials the fire danger zone will have the greatest radius and cover the largest area, while for others the explosion danger zone will be the greatest. For example, conventional petroleum fuel products stored in unpressurized tanks do not emit blast overpressure of dangerous levels when ignited. In most cases, hazardous substances will be stored in pressurized containers. The resulting blast overpressure will be experienced at a greater distance than the resulting thermal radiation for the standards set in Section 51.203. In any event the hazard requiring the greatest separation distance will prevail in determining the location of HUD-assisted projects.

The standards developed for the protection of people and property are given in the following table.

	Thermal radiation	Blast overpressure
Amount of acceptable exposure allowed for building structures.	10,000 BTU/ft²hr.	0.5 psi.
Amount of acceptable exposure allowed for people in open areas.	450 BTU/ft² hr ...	0.5 psi.

Problem Example

The following example is given as a guide to assist in understanding how the procedures are used to determine an acceptable separation distance. The technical data are found in the HUD Guidebook. Liquid propane is used in the example since it is both an explosion and a fire hazard.

In this hypothetical case a proposed housing project is to be located 850 feet from a 30,000 gallon liquid propane (LPG) tank. The objective is to determine the acceptable separation distance from the LPG tank. Since propane is both explosive and fire prone it will be necessary to determine the ASD for both explosion and for fire. The greatest of the two will govern. There is no dike around the tank in this example.

Nomographs from the technical Guidebook have been reproduced to facilitate the solving of the problem.

ASD For Explosion

Use Figure 1 to determine the acceptable separation distance for explosion.

The graph depicted on Figure 1 is predicated on a blast overpressure of 0.5 psi.

The ASD in feet can be determined by applying the quantity of the hazard (in gallons) to the graph.

In this case locate the 30,000 gallon point on the horizontal axis and draw a vertical line from that point to the intersection with the straight line curve. Then draw a horizontal line from the point where the lines cross to the left vertical axis where the ACCEPTABLE SEPARATION DISTANCE of 660 feet is found.

Therefore the ASD for explosion is 660 feet

Since the proposed project site is located 850 feet from the tank it is located at a safe distance with regards to blast overpressure.

ACCEPTABLE SEPERATION DISTANCE
HAZARDOUS GAS CONTAINER
DIKED/UNDIKED

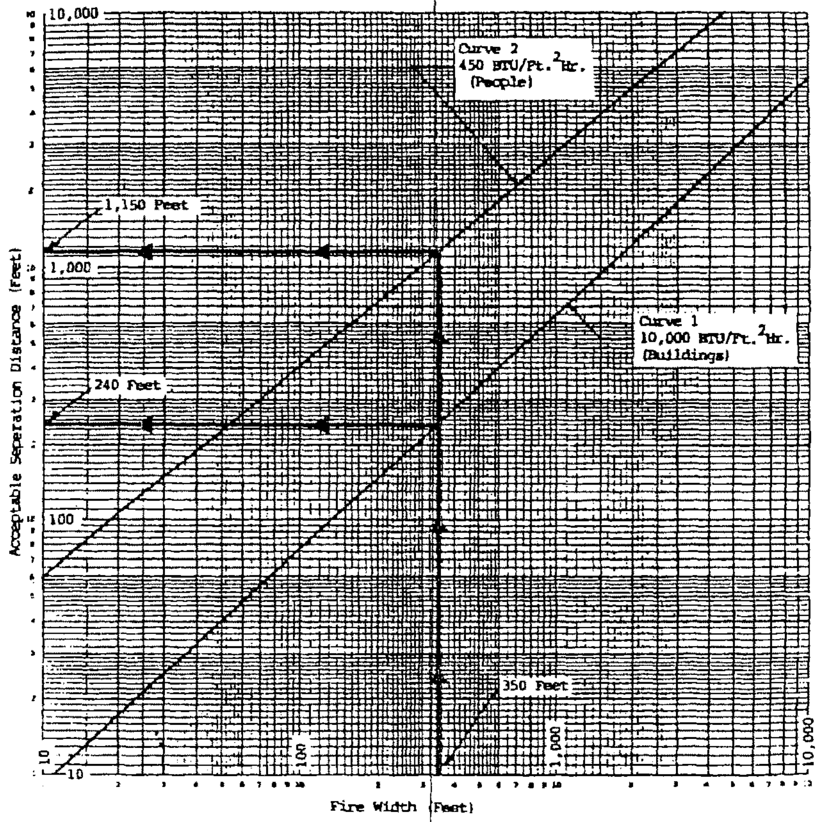

Figure 3

[49 FR 5105, Feb. 10, 1984; 49 FR 12214, Mar. 29, 1984]

5. LNG PROJECT IMPACTS ON BOATING, FISHING (COMMERCIAL, SPORT AND RECREATIONAL) AND PORT SHIPPING:

* Excerpt from Baltimore County LNG Task Force Final Report January 9, 2007 (Pages 29 & 30)

** NOTE: The AES Facility Project and Ship Transit will ** Have a more than Significant Detrimental Effect On Boating and Fishing (Commercial and Recreational) Along the entire proposed route from the Atlantic Ocean up to and including the Tidal Waters at Sparrows Point. Also, under USGS Safety Zone Exclusion all ships will have to GIVE WAY AND HOLD while a LNG Tanker passes.

Point area is 'environmentally positive' (i.e., the area's environmental quality is better than if the project did not occur). Environmental impacts shall be avoided or minimized to the extent possible and the remaining impacts offset by mitigation.

V-6. Maryland should ensure, through the Water Quality Certification and the Consistency Determination, that the proposed activity is consistent with existing Harbor-wide remediation and restoration programs.

V-7. No activity should be allowed at Sparrows Point that interferes with or delays the required environmental remediation of the site.

V-8. Maryland shall be a strong advocate for the residents of the surrounding communities, ensuring that any development on the site is consistent with the principles of environmental justice.

V.C.3. Effect of the proposed facility on recreational and commercial boating, fishing and crabbing.

Findings:

V-9. In 2005, there were 200,532 boats registered in Maryland, of which 21,357 were registered in Baltimore County, and 3,032 were registered in Baltimore City[9].

Table 8. Maryland Boat Registration, 2005

	Pleasure	Commercial Fishing	Other	Total
Baltimore County	21,004	14	339	21,357
Baltimore City	2,933	0	99	3,032
State Total	172,069	735	4,304	200,532

V-10. The Patapsco River is the site of a significant amount of commercial fishing activity. Between 2003 and 2006, an annual average of approximately 85,000 pounds of fish and shellfish were commercially harvested from the Patapsco River[10]. Hard blue crabs compromise approximately 75% by weight of the Patapsco River commercial fishery harvest.

V-11. Approximately 500 charter boat trips per year originate in Baltimore Harbor for recreational fishing, sightseeing, and other services (pers.

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[9] Maryland Department of Natural Resources, Licensing and Registration Service

[10]

comm. to Russell Donnelly from the Watermens Association). Charter fishing boats must report to DNR where they stop to fish. The Patapsco River is utilized by charter fishing boats on a highly variable basis depending on annual variation in the location of fish populations. Between 2003 and 2005, the charter boat fishing industry reported a low of four fishing trips in 2003 and a high of 100 fishing trips in 2004 (DNR Fisheries Service).

V-12. Evidence is strong that the Bear Creek area is currently a spawning habitat for white perch, and was historically for other species[11].

Recommendations:

Maryland should strongly recommend through the comment process that:

V-9. FERC implement marine safety and security zones based solely on safety and security considerations and these must not be compromised to accommodate impacts on commercial and recreational activities. If the impacts on commercial and recreational activities are unacceptable, then Maryland should recommend to FERC that the project not move forward.

V-10. FERC, with input from Maryland DNR, should accurately calculate the economic and cultural impacts to the recreational and commercial communities resulting from the inevitable loss of access to the waterway, and require that the applicant compensate these communities appropriately.

V.C.4. Energy supply and policy

Findings:

V-13. In general, any new facility would increase the reliability of natural gas supply to the region, which may influence utility costs.

V-14. The applicant's stated purpose for the proposed facility is to serve customers outside Maryland. The Task Force is not aware of any plans to build a gate station from this facility feeding to Maryland consumers.

V-15. The use of natural gas typically has less overall environmental impact than other fossil fuels, including coal.

V-16. Current LNG imports at Cove Point are approximately twice the current natural gas consumption in Maryland, providing LNG for regional distribution. After expansion of Cove Point, which has been approved by FERC and is currently underway, the capacity of that facility will be more

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[11] Maryland Department of Natural Resources, Fisheries Service

6. IMPACTS ON POPULATION, SOCIO-ECONOMICS AND ENVIRONMENTAL JUSTICE:

- Economic Impact
- Industrial Concentration on Sparrows Point Peninsula
- Socio-Economics and Environmental Justice

ECONOMIC IMPACTS

The total number of worker positions for the Sparrows Point Peninsula from existing facilities (3000 jobs) and proposed facilities(210 jobs)does not present any major benefit to citizens in search of employment, who number in excess 150 people on a daily basis at the Maryland Job Center at the Eastpoint Facility alone.

This property should be used to further the revitalization of Maryland focused on high tech Green Businesses and tourism. A "New Vision" exists in the planning stage which would provide approximately 10,000 jobs instead of only approximately 3500 jobs. However, we must first think and see past "Heavy Industry Only" before progress can be achieved.

The tax paying citizens (approximately 120,000 strong in number) for this region have heard the "New Vision" proposal and the major percentage would rather pursue this pathway than face another century of pollution compounding the 110 years suffered thusfar.

INDUSTRIAL CONCENTRATION

INDUSTRIES ON SPARROWS POINT PENINSULA

EXISTING:	DATES:
Bethlehem Steel Corporation	1890-2000
International Steel Group	2001-2007
Mittal Steel Incorporated	2003-2007
Baltimore Marine Industries	2001-2003
SPS Limited Partnership, LLLP (Shipyard)	2003-2007
Lafarge	1999-2007

PROPOSED:

AES LNG Sparrows Point, LLC

Fritz Enterprises, Inc.

MultiServ

Maryland Port Administration

Kroff Materials Reprocessing, Inc.

ECRON Ethanol Facility

Etc........(i.e. Mittal LNG Facility)

Issue # 1: The current and projected population and demographic characteristics of the proposed Production, Storage and Regasification facility.

Finding:

The socioeconomic data of the immediate impact project area:

a.	Total Population	71,554
b.	Population Density (persons per square mile)	5,541
c.	Total Housing Units	30,149
d.	Percent of Population 5 years or older with disability	23.6%
e.	Percent of Families in Poverty (1999)	6.0%
f.	Percent of Families with female householder	19.2%
g.	Percent of Individuals in Poverty	8.1%
h.	Median Housing Value (1999)	$103,650
i.	Median Household Income (1999)	$43,359

Attachment 1: U. S. Census Bureau, Census 2000 Profiles (3 pages)
Attachment 2: Map that shows 1, 2 and 3 mile radius from LNG site

Recommendations:

Population Density is much too high to be considered a remote site as recommended by federal guidelines. The concentration of poverty & minority population is the highest in Baltimore County. Turners Station, an African American community of 3,300 plus residents is approximately 1.3 miles from the proposed LNG site.

Issue # 2: The current and proposed land use near the location of the proposed production, storage and regasification facility.

Finding:

HUD Blast Overpressure Safety Standard- Section 51.204 In reviewing application for proposed HUD-assisted projects involving the installation of hazardous facilities, the Department shall ensure that such hazardous facilities are located at an acceptable separation distance from residences and from any other facility or area where people man congregate or be present.

Recommendation:

We are following Housing and Urban Department (HUD) Regulation that explain their idea of the Acceptable Safe Distance (ASD) of people and buildings from a hazardous material containment facility.

If a catastrophic release was to occur, the fireball width calculation is 2 times the square root of the material volume in gallons. Our calculation is based on a small vessel of 33,000,000 million gallons. This leads to the following calculation: 2*SQR (33000000) feet. That's 11,489 feet! That puts the fireball at a width of 2.17 miles. There are two areas to consider-Human (450 BTU/sq. ft.) and Buildings (10000 BTU/sq. ft.) The instruction on the ASD chart states that you take the longer of the two distances into consideration when determining the ASD, this is normally to protect human life. At 10,000 feet the ASD for humans is OFF THE CHART. Since our fireball would grow to ll,489 feet, we estimate the ASD for humans at 12,500 to 13,500 feet (2.37 miles to 2.56 miles) and an ASD for buildings at 6,250 to 6,500 feet (1.18 miles to 1.23 miles). In this case the HUD regulation would require an ASD (Acceptable Safe Distance) of 2.5 miles from any HUD resident, NOT the 1.0 mile offered by AES.

In consideration of the fact that the Impact Area has the highest concentration of Subsidies in Baltimore County (17.99%), this project is not acceptable under HUD regulations of Acceptable Safe Distance of people and buildings from the proposed LNG Facility (A classified Hazardous Material Facility).
Please Note: We did not include the calculations of the three (3) 40 million gallon plus storage tanks proposed.

Attachment 3: HUD regulation 51.204-24CFr subtitle A (5 pages)
Attachment 4: HUD program figures in Zip Code 21219 & 21222 (Impact Area)

Issue # 2- Continued

Finding:

Current Land Use within a two mile (2) radius of the proposed LNG site. Zoning is MH on the proposed site.

a. Mittal Steel
b. ATEC Hydraulics
c. Mobile Dredge
d. Onyx Environmental Services
e. Air Products and Chemicals
f. Multi-Serv
g. Kinder Morgan
h. LaFarge
i. Kroff Chemical
j. Barletta Willis Corporation
k. Senesco
l. Airgas
m. North America Ship Recycling

Please Note: The nearest ignition source is 1,362 feet.

Recommendation:

A Master Plan needs to be developed for the Sparrows Point Peninsula initiated by Baltimore County with the Support of the State of Maryland. There needs to be extensive evaluation of the following:

a. The site is in a Hundred (100) year flood plain.
b. Bear Creek is a impaired body of Water.
c. The site is a Chesapeake Bay Critical Area which limits development activities in the Buffer, specified in COMAR 27.01.09 when addressing water dependent facilities.
d. The Coastal Zone Management Act of 1972 gives states with federally approved coastal programs the lead in coordinating and strengthening coastal zone management activities. Baltimore County is part of the Coastal Zone.

There must be strict adherence to all Federal, State & Local laws & regulations.

Issue # 2-Continued

Finding:

Proposed Land Uses.

a. AES proposes to use the site for depositing and processing of dredge materials.

b. Ethanol Plant

c. Screening Plant (New & Expansions)

d. Hazardous Materials recycling

e. Waste Oil Recycling (Expansion)

f. Co-Generation Plant

Recommendation:

The current proposed site of an LNG Facility & Ethanol Plant should be prohibited because it is in violation of Exclusion Zones. Furthermore, there is a State Law prohibiting dredge spoil deposits within five miles of Hart Miller Island. This site is within that exclusion area.

Attachment # 5: Map showing location of proposed Ethanol & LNG Facility.

Issue # 3-The Natural and Physical Aspects of Proposed Location

Finding:

There is a Region 3 GPRA Baseline RCRA Correction Consent Decree which has identified the following Contaminants on proposed site. The main contaminants associated with this site have not yet been fully defined. Past assessments have identified the following contaminants: antimony, arsenic, cadmium, chromium, copper, iron, lead, manganese, nickel, tin, zinc, ammonia, benzene, cyanide, ethyl benzene ethylene glycol, hydrogen, cyanide, hydrogen sulfide, naphthalene, PAHs, PCBs, pentachlorophenol, phenols, pyrene, sodium phenolate, styrene. sulfuric acid, toluene, trichloroethylene, xylene, coal tar, oils, lime sludge, waste alkaline rinses, mill scale and ship yard wastes.

Issue # 3-Continued

Recommendation:

Complete remediation of this site is required due to the toxic contaminants that will potentially affect the residents through, air, water and surface releases when disturbed. There must be a disposal plan for transport to a Certified, Contained Hazardous Landfill.

Finding:

A preliminary Geotechnical Engineering Study was performed in July of 2006 to evaluate the subsurface conditions of the project site to determine the suitability of the site for construction. The test borings indicate that the site is underlain by existing fills containing concrete rubble and steel slag. The fills are underlain by up to 84-feet of soft, compressible, alluvial soils. These soils are not considered suitable for foundation support. Soil improvement methods such as stone columns were considered; however, due to the depth of the unsuitable soils, soil improvement is not considered economically feasible for this site. Recommendation was made that new structures be supported by driven H-pile foundation.

Recommendation:

There is serious concern about the weight of three (3) proposed tanks 180 foot high and approximately 265 ft. in diameter with complete concrete containment.

Example: The weight of product for one (1) of the proposed LNG storage tanks is estimated to be 564,378,342 Million lbs. When you add the weight of concrete (one cubic yard of concrete equals 27 cubic feet, which weighs 4,000 lbs. or 2 tons) you would need an enormous amount of concrete and rebar for the installation of a tank foundation which could far exceed the weight of the product. You also must consider the weight of the actual nickel lined storage tanks. The weight of one tank in service could exceed a Trillion lbs. A filled area; such as this proposed site, can probably not support the enormous weight of three (3) proposed storage tanks safely. A complete comprehensive study must be performed.

Issue # 3-Continued

Finding:

Section 105, Prohibited Uses in Chesapeake Bay Critical Area (Bill No. 32-1988) Baltimore County Zoning Regulations updated 08-15-2006

The establishment or expansion of the following uses is prohibited in all Chesapeake Bay Critical Areas:

A. Solid or hazardous waste collection or disposal facilities
B. Sanitary Landfills
C. Permanent sludge hauling, storage or disposal facilities other than those associated with wastewater treatment.
D. Transportation facilities and Utility transmission facilities, except those necessary to serve uses permitted in the underlying zone per the Baltimore County Zoning Regulations. Such uses may be permitted only in intensely developed areas and only after the activity or facility has demonstrated that there will be a net improvement in water quality to the adjacent body of water (Bill No. 9-1996).
E. Nonmaritime heavy industries, except those uses permitted in the the underlying zone as authorized by these regulations. Such uses may be permitted only in intensely developed areas, as defined by the Baltimore County Code, and only after the activity or facility has demonstrated that there will be a net improvement in water quality to the adjacent body of water.

Recommendation:

In theory, the facility will be transporting natural gas through an interstate pipeline. This facility is a utility transmission facility, since it will be supplying an energy source to Maryland & North East. Clarification of the regulation must be evaluated.

Dredging the toxic sediment at the proposed site will not produce an improvement in water quality. Laws & regulations need to be followed.

Demographic Characteristic	Baltimore County	Immediate Impact Project Area	Dundalk CDP	Edgemere CDP
Total Population	754,292	71,554	62,306	9,248
Male	357,347	34,322	29,742	4,580
Female	389,945	37,232	32,564	4,668
Population Density (persons per square mile)	1,260.1	5,541.0	4,684.7	856.3
Land Area (square miles)	598.6	24.1	13.3	10.8
Population by Age				
Under 5	45,252	3,994	3,612	382
School Age (5-19)	152,440	14,559	12,675	1,884
Senior Citizen (65+)	110,335	12,585	11,042	1,543
Median Age (years)	37.7	40.3	39.2	41.4
Race				
White	561,132	64,455	55,815	8,640
African American	151,600	5,160	4,680	480
Asian	23,947	489	460	29
Native Hawaiian and Other Pacific Islander	242	42	25	17
Some other race	4,685	278	270	8
Two or more races	10,763	755	698	57
Hispanic or Latino	13,774	965	904	61
Total Housing Units	313,734	30,149	26,385	3,764
Vacant Housing Units	13,857	1,847	1,613	234
Percent Vacant Units	4.4%	6.2%	6.1%	6.3%
Total Households	299,877	28,302	24,772	3,530
Family Households	198,605	19,495	16,980	2,515
Non-Family Households	101,272	8,807	7,792	1,015

Demographic Characteristic	Baltimore County	Immediate Impact Project Area	Dundalk CDP	Edgemere CDP
Households with individuals under 18 years	100,033	9,557	8,394	1,163
Households with individuals 65 years and over	77,933	9,271	8,140	1,131
Owner-occupied units	202,569	20,610	17,838	2,772
Renter-occupied units	97,298	7,692	6,934	758
Population 3 years and over enrolled in school	201,904	16,868	14,639	2,229
Percent of Population 3 years and over enrolled in school	26.8%	23.8%	23.5%	24.1%
Percent high school graduate	84.3	69.7	69.5	69.8
Percent bachelor's degree or higher	30.6	7.7	6.2	9.2
Percent of Population 5 years or older with disability	18.2%	23.6%	25.4%	21.7%
~~Percent Unemployed (2000)~~	~~4.2~~	~~4.7~~	~~6.3~~	~~3.0~~
Median Household Income (1999 dollars)	$50,667	$43,359	$39,789	$46,928
Percent of Households with Public Assistance Income	1.7	2.5	2.6	2.4
Percent of Families in Poverty (1999)	4.5	6.0	6.6	5.4
Percent of Families with female householder, no husband present in poverty	13.8	19.2	19.2	19.2
Percent of Individuals in Poverty	6.5	8.1	9.2	7.0
Number of Households with No Vehicles Available	26,548.0	3,825.0	3,567.0	258.0
Percent of Households with No Vehicles Available	8.9	10.9	14.4	7.3
Median Housing Value (1999 dollars)	$127,300	$103,650	$82,500	$124,800

Demographic Characteristic	Baltimore County	Immediate Impact Project Area	Dundalk CDP	Edgemere CDP
Percent of Renter Households Who Spend 30% or more of their income on gross rent	34.3	29.3	33.1	25.4

Source: U.S. Census Bureau, Census 2000 Profiles Tables DP-1 through DP-4.

CDP is U.S. Census Bureau Census Designated Place for 2000.
*** Project area percentage are arithmetic averages of Dundalk and Edgemere CDPs*
*** Percent vacant units is based on year-round housing units (less seasonal and migratory units).*

7. OUT OF COMPLIANCE IMPACTS OF ACTS AND REGULATIONS REGARDING AES PROJECT SITING VERSUS CHESAPEAKE BAY WATERSHED PROGRAMS (STATE AND FEDERAL):

- Conditions at Sparrows Point, Maryland, Representing Immediate, Severe and Irreparable Harm to Residents, and Environment IF Dredging is allowed to Proceed

** NOTE: Laws/Regulations/Acts Included **

Clean Water Act 301 A

Army Corps of Engineers CWA 404 Permitting
33 CFR 320.4

Solid Waste Disposal Act R.C.R.A
42 U.S.C. 6921 (a) and (b)
42 U.S.C 6901 (b)(5)

Coastal Zone Management Act
33 U.S.C. 2803
33 U.S.C 1311
33 U.S.C 2803 (b)

Endangered Species Act
16 U.S.C 1533 (a)(1)(A)

Environmental Justice Act
Executive order 12898
Fed. Reg. 7629 (1994) as amended by
EO 12948 60 Fed. Reg. 6381 (1995)

The Public Health and Welfare
Chapter 82 Solid Waste Disposal
Imminent Hazard
42 U.S.C 6973

* Maryland Senate Bill 0307 1997
Dredge Containment Facility Hart Island Law - 5 Miles

* Baltimore County Zoning Regulations 1998 Edition (BCZR)
Updated 08-15-2006, V16

* Article 1 General Provisions
Section 101A, Critical Area Definitions
(Bill Nos. 32-1988 ; 9-1996EN)

* Section 105, Prohibited Uses in Chesapeake Bay Critical Area
(Bill No. 32-1988)

* Maryland COMAR Title 26 Solid and Hazard Waste

* Maryland COMAR Title 27 Critical Areas

* Maryland COMAR Title 7 - 201 Environmental Annotated Code

* 40 Congressional Federal Register (CFR)
Environmental Protection Act

** NOTE: The intended Innovative Reuse proposed by AES is ** Not allowable under existing Federal, Maryland and Baltimore County Law. This is due to the fact that the Sediment at the AES Sparrows Point LNG, LLC Facility Site contains from 17 to 34 CERCLA High Priority Pollutants in undetermined concentrations over a 2.5 Square Mile area to an approximate depth of 20 feet. To use this material to produce a saleable byproduct Would violate existing laws, acts and regulations. Maryland Port Administration is currently developing a program to reuse Baltimore Harbor sediment taken From the thoroughly dredged Main Channel and Spur Channels during Maintenance Dredging. However, No High Priority contaminated dredge material is Allowed for reuse.

** NOTE: Throughout the entire AES Project Reporting ** PF Resource Reports (1 thru 13) AES Lacks Specificity in determining a Cohesive, Designated Project Blueprint and in addressing all Pertinent Laws, Acts and Regulations pursuant to this Permit.

Conditions at Sparrows Point, Maryland, Representing Immediate, Severe, And Irreparable Harm to Residents and Environment If Dredging Is Allowed to Proceed

I. Clean Water Act.

The proposed dredging off the Sparrows Point, Maryland, peninsula will release into the waters of the United States toxins already proven to be present in the hazardous and radioactive waste present in the sediment of this proposed dredge location, in violation of the Clean Water Act § 301(a).

II. Army Corps of Engineers CWA § 404 Permitting.

The Army Corps of Engineers, as part of their decision-making process in granting a CWA § 404 dredge and fill permit, did not adequately factor in the detrimental human health effects to the surrounding Sparrows Point residents and to all residents using the Chesapeake Bay for food, water, or recreation, in their evaluation of serving and protecting "the public interest" (33 C.F.R. § 320.4).

III. Solid Waste Disposal Act (R.C.R.A.).

The toxins present in the sediment off the Sparrows Point peninsula, the proposed site for dredging, have been proven to contain hazardous waste mixed with nonhazardous waste. Some of the hazardous waste has been proven to be radioactive. The other hazardous waste contains persistent organic pollutants (POPs) and volatile organic compounds.

In view of the long history of placing hazardous waste, including radioactive waste, in and around the Sparrows Point peninsula, and incomplete record-keeping practices, no one can guarantee the sum total of the exact constituents present in the sediment, nor provide an accurate accounting of the limit of harmful health effects, such as exposure to carcinogens, mutagens, and teratogens, at levels which endanger human health. (42 U.S.C. § 6921(a) and (b).) Exposure to single contaminants has been proven to be harmful to public health, and the long-range human health and environmental effects of exposure to multiple toxins, which have been combined, increases exponentially, giving rise to catastrophic human health and environmental effects.

In view of the complexity of the toxic mix, and the very serious health consequences that are at stake from exposure, any further disruption of the sediment of these waters should be prohibited. The Solid Waste Management Act states: "the placement of inadequate controls on hazardous waste management will result in substantial risks to human health and the environment," (42 U.S.C. § 6901(b)(5)).

IV. Coastal Zone Management Act.

As part of the coastal Zone Management Act, Maryland has been charged with improving and protecting the Chesapeake Bay area. The Chesapeake Bay has been designated for intensive coastal water quality monitoring. (33 U.S.C.A. § 2803) This Comprehensive Coastal Water Quality Monitoring includes, but it not limited to, ambient water quality, benthic environmental quality (including analysis of contaminant levels in sediments in relation to criteria and standards pursuant to title III of the Federal Water Pollution Act, 33 U.S.C 1311 et seq.), health and quality of living resources, and identification of sources of environmental degradation. (33 U.S.C.A. § 2803(b)).

The progress of improving and protecting the entire Chesapeake Bay is jeopardized by the proposed dredging off of Sparrows Point. It is highly likely that the last 20 years of water quality improvements in the Bay, accomplished through the work of many conservation groups, will be impaired or reversed if the dredging is allowed to proceed.

V. Endangered Species Act.

Dredging of the proposed area will immediately compromise endangered and threatened species, through destruction, modification, curtailment of their habitat (including critical habitat), and range (16 U.S.C § 1533(a)(1)(A)).

VI. Environmental Justice Act.

Dredging of the proposed area and its ensuing release of toxins from the disturbed sediments will subject residents of the Sparrows Point peninsula, a low-income and mostly African-American community with many HUD program recipients, to disproportionately high human health risks from new exposure to carcinogens in contravention of Executive Order 12,898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (Fed. Reg. 7629 (1994), as amended by EO 12,948, 60 Fed. Reg. 6381 (1995)).

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- TITLE 42--THE PUBLIC HEALTH AND WELFARE
    - CHAPTER 82--SOLID WASTE DISPOSAL

- SUBCHAPTER I--GENERAL PROVISIONS
- SUBCHAPTER II--OFFICE OF SOLID WASTE; AUTHORITIES OF THE ADMINISTRATOR
- SUBCHAPTER III--HAZARDOUS WASTE MANAGEMENT
- SUBCHAPTER IV--STATE OR REGIONAL SOLID WASTE PLANS
- SUBCHAPTER V--DUTIES OF SECRETARY OF COMMERCE IN RESOURCE AND RECOVERY
- SUBCHAPTER VI--FEDERAL RESPONSIBILITIES
- SUBCHAPTER VII--MISCELLANEOUS PROVISIONS
- SUBCHAPTER VIII--RESEARCH, DEVELOPMENT, DEMONSTRATION, AND INFORMATION
- SUBCHAPTER IX--REGULATION OF UNDERGROUND STORAGE TANKS
- SUBCHAPTER X--DEMONSTRATION MEDICAL WASTE TRACKING PROGRAM

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TITLE 42--THE PUBLIC HEALTH AND WELFARE

CHAPTER 82--SOLID WASTE DISPOSAL

SUBCHAPTER VII--MISCELLANEOUS PROVISIONS

Sec. 6973. Imminent hazard

(a) Authority of Administrator

Notwithstanding any other provision of this chapter, upon receipt of evidence that the past or present handling, storage, treatment, transportation or disposal of any solid waste or hazardous waste may present an imminent and substantial endangerment to health or the environment, the Administrator may bring suit on behalf of the United

States in the appropriate district court against any person (including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility) who has contributed or who is contributing to such handling, storage, treatment, transportation or disposal to restrain such person from such handling, storage, treatment, transportation, or disposal, to order such person to take such other action as may be necessary, or both. A transporter shall not be deemed to have contributed or to be contributing to such handling, storage, treatment, or disposal taking place after such solid waste or hazardous waste has left the possession or control of such transporter if the transportation of such waste was under a sole contractural \1\ arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste. The Administrator shall provide notice to the affected State of any such suit. The Administrator may also, after notice to the affected State, take other action under this section including, but not limited to, issuing such orders as may be necessary to protect public health and the environment.

\1\ So in original. Probably should be ``contractual''.

(b) Violations

Any person who willfully violates, or fails or refuses to comply with, any order of the Administrator under subsection (a) of this section may, in an action brought in the appropriate United States district court to enforce such order, be fined not more than $5,000 for each day in which such violation occurs or such failure to comply continues.

(c) Immediate notice

Upon receipt of information that there is hazardous waste at any site which has presented an imminent and substantial endangerment to human health or the environment, the Administrator shall provide immediate notice to the appropriate local government agencies. In addition, the Administrator shall require notice of such endangerment to be promptly posted at the site where the waste is located.

(d) Public participation in settlements

Whenever the United States or the Administrator proposes to covenant not to sue or to forbear from suit or to settle any claim arising under this section, notice, and opportunity for a public meeting in the affected area, and a reasonable opportunity to comment on the proposed settlement prior to its final entry shall be afforded to the public. The decision of the United States or the Administrator to enter into or not to enter into such Consent Decree, covenant or agreement shall not constitute a final agency action subject to judicial review under this chapter or chapter 7 of title 5.

(Pub. L. 89-272, title II, Sec. 7003, as added Pub. L. 94-580, Sec. 2, Oct. 21, 1976, 90 Stat. 2826; amended Pub. L. 95-609, Sec. 7(q), Nov. 8, 1978, 92 Stat. 3083; Pub. L. 96-482, Sec. 25, Oct. 21, 1980, 94 Stat. 2348; Pub. L. 98-616, title IV, Secs. 402, 403(a), 404, Nov. 8, 1984, 98 Stat. 3271, 3273.)

Codification

In subsec. (d), ``chapter 7 of title 5'' substituted for ``the Administrative Procedure Act'' on authority of Pub. L. 89-554, Sec. 7(b), Sept. 6, 1966, 80 Stat. 631, the first section of which enacted Title 5, Government Organization and Employees.

Amendments

1984--Subsec. (a). Pub. L. 98-616, Sec. 402, inserted ``past or present'' after ``evidence that the'', substituted ``against any person (including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility) who has contributed or, who is'' for ``to immediately restrain any person'', substituted ``to restrain such person from'' for ``to stop'', substituted ``, to order such person to take such other action as may be necessary, or both'' for ``or to take such other action as may be necessary'', and inserted ``A transporter shall not be deemed to have contributed or to be contributing to such handling, storage, treatment, or disposal, taking place after such solid waste or hazardous waste has left the possession or control of such transporter, if the transportation of such waste was under a sole contractural [sic] arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste.''

Subsec. (c). Pub. L. 98-616, Sec. 403(a), added subsec. (c).

Subsec. (d). Pub. L. 98-616, Sec. 404, added subsec. (d).

1980--Pub. L. 96-482, Sec. 25, designated existing provisions as subsec. (a), substituted ``may present'' for ``is presenting'' and ``such handling, storage, treatment, transportation or disposal'' for ``the alleged disposal'' and authorized other action to be taken by the Administrator after notice including issuance of protective orders relating to public health and the environment, and added subsec. (b).

1978--Pub. L. 95-609 struck out ``for'' after ``restrain any person''.

Transfer of Functions

For transfer of certain enforcement functions of Administrator or other official of Environmental Protection Agency under this chapter to Federal Inspector, Office of Federal Inspector for the Alaska Natural Gas Transportation System, and subsequent transfer to Secretary of Energy, see note set out under section 6903 of this title.

Section Referred to in Other Sections

This section is referred to in sections 6972, 7412, 9604, 9606 of this title.

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Unofficial Copy 1997 Regular Session

M3 7lr1735

CF 7lr0858

By: Senator Collins (Baltimore County Administration) and Senators Sfikas and Stone

Introduced and read first time: January 23, 1997

Assigned to: Economic and Environmental Affairs

A BILL ENTITLED

AN ACT concerning

Environment - Dredge Spoil - Hart-Miller-Pleasure Island

FOR the purpose of prohibiting the disposition of **dredge** spoil at the **Hart**-Miller Island Dredged Material **Containment Facility** after a certain date and from exceeding certain heights in certain cells; prohibiting the Board of Public Works from issuing a license or an amendment to a license authorizing the disposition of **dredge** material in the **Hart**-Miller Island Dredged Material **Containment Facility** after a certain date and from exceeding certain heights in certain cells; requiring certain State agencies to hold public meetings concerning the development of the **Hart**-Miller Island Dredged Material **Containment Facility**; requiring certain State agencies to enter into a memorandum of understanding or an amendment to the memorandum of understanding by a certain date that will include certain information; and generally relating to **dredge** spoil at **Hart**-Miller-Pleasure Island.

BY repealing and reenacting, with amendments,

Article - Environment

Section 5-1103 and 16-202

Annotated Code of Maryland

(1996 Replacement Volume and 1996 Supplement)

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That the Laws of Maryland read as follows:

Article - Environment

5-1103.

(a) (1) Except for **dredge** spoil from local dredging projects initiated by Baltimore County in the waters of Baltimore County, the Department may not approve any contained area for the redeposit of spoil within 5 miles of the **Hart**-Miller-Pleasure Island chain in Baltimore County.

(2) A contained area described in paragraph (1) of this subsection may not exceed the approximately 1,100 acre size provided in the projects U.S. Army Corps of Engineers permit dated November 22, 1976.

(3) (I) THE MAXIMUM HEIGHT OF **DREDGE** SPOIL DEPOSITED IN THE **HART**-MILLER ISLAND DREDGED MATERIAL **CONTAINMENT FACILITY** MAY NOT EXCEED:

1. 44 FEET ABOVE THE MEAN LOW WATER MARK IN THE NORTH CELL; OR

2. 28 FEET ABOVE THE MEAN LOW WATER MARK IN THE

SOUTH CELL.

(II) ON OR AFTER JANUARY 1, 2010, **DREDGE** SPOIL MAY NOT BE DEPOSITED IN THE **HART-MILLER** ISLAND DREDGED MATERIAL **CONTAINMENT FACILITY**.

(b) (1) Except as provided in paragraph (2) of this subsection, only spoil from the excavation or dredging of Baltimore Harbor, its approach channels, and Baltimore County tributary spoil from an approved dredging project in any of the Baltimore County tributaries of the Chesapeake Bay may be redeposited in a contained area described in subsection (a) of this section.

(2) Only **dredge** spoil from local dredging projects initiated by Baltimore County in the waters of Baltimore County may be redeposited in any additional contained area for the redeposit of spoil authorized under subsection (a)(1) of this section.

16-202.

(a) A person may not **dredge** or fill on State wetlands without a license.

(b) The Secretary shall assist the Board in determining whether to issue a license to **dredge** or fill State wetlands. The Secretary shall submit a report indicating whether the license should be granted and, if so, the terms, conditions, and consideration required after consultation with any interested federal, State, and local unit, and after issuing public notice, holding any requested hearing, and taking any evidence the Secretary thinks advisable.

(c) (1) Upon receipt of a report by the Secretary, the Board shall decide if issuance of the license is in the best interest of the State, taking into account the varying ecological, economic, developmental, recreational, and aesthetic values each application presents. If the Board decides to issue the license, the issuance of the license shall be for consideration and on terms and conditions the Board determines. Every license shall be in writing.

(2) With respect to an application for a license to fill or construct a shore erosion control structure other than riprap on State wetlands, the Board may issue the license without public notice if the fill area is less than 300 feet in length parallel to the fast land as close to the fast land as structurally feasible but not more than 10 feet channelward of the mean high water line and if after a site visit the report of the Secretary recommends that the license be granted. The Board may issue a license without public notice where an emergency exists caused by act of God, natural disaster, catastrophe, or other similar natural event when the health, safety, or welfare of the citizens of the State would be jeopardized by a delay caused by time requirements for public notice. However, the license may be granted by the Board only with the concurrence of the Secretary. The Secretary shall provide prompt public notice of the emergency license issuance and the opportunity to submit written comments or to request a hearing to determine whether the emergency license shall be revoked or made permanent. If a hearing is requested, the hearing shall be scheduled within 30 days of the emergency issuance of the license.

(3) If the report of the Secretary recommends that a license be granted, the Board may issue the license without public notice:

(i) To fill or construct a shore erosion control structure of riprap on State wetlands if the fill area is less than 500 feet in length parallel to the fast land as close to the fast land as structurally feasible but not more than 10 feet channelward of the mean high water line;

(ii) To repair or replace a bulkhead for the purpose of shore erosion control where the bulkhead is presently functional, but is deteriorating or damaged, provided that the repair or replacement structure does not extend more than 18 inches channelward of the existing structure. Repair or replacement may include riprap placed along the base of the bulkhead, provided that the riprap shall not extend more than 10 feet channelward of the bulkhead;

(iii) To fill near shore shallow water bottom extending no more than 35 feet channelward of the mean high water line provided the fill area is less than 500 feet in length parallel to the fast land for the purpose of shore erosion control by landscaping and wetland plant establishment;

(iv) To construct or repair a private noncommercial boat ramp provided the ramp does not exceed 12 feet in width and extend more than 30 feet channelward of the mean high water line; or

(v) To maintenance **dredge** a mooring, private or commercial boat ramp, mobile boat hoist slip, or marine railway when no more than 100 cubic yards of material nor an area greater than 1,500 square feet need to be dredged.

(4) With respect to the maintenance dredging of projects in State wetlands for which a license is to be issued, the license may include provision for periodic maintenance dredging if recommended by the report of the Secretary provided that the maintenance dredging be effected:

(i) Within the area, depth, and in conformity with other limitations contained in the license;

(ii) That no more than 500 cubic yards of material be dredged at each maintenance dredging to restore licensed works;

(iii) That the material from maintenance dredging be deposited upon the designated or other upland site approved by the Secretary; and

(iv) That the Secretary be notified and approve of each maintenance dredging operation.

(5) The provisions for periodic maintenance dredging under paragraph (4) of this subsection shall be effective for no more than 6 years beyond the date of issuance of the license.

(6) If the licensee desires to continue maintenance dredging beyond the expiration date authorized in paragraph (5) of this subsection, the licensee must obtain a new license by submitting an application to the Board for review in accordance with the procedures of this section.

(d) The provisions of this section do not apply to any operation for:

(1) Dredging and filling being conducted as of July 1, 1970, as authorized under the terms of an appropriate permit or license granted under the provisions of existing State and federal law;

(2) Dredging of seafood products by any licensed operator, harvesting of seaweed, or mosquito control and abatement as approved by the Department of Agriculture;

(3) Improvement of wildlife habitat or agricultural drainage ditches as approved by an appropriate unit; or

(4) Routine maintenance or repair of existing bulkheads, provided that there is no addition or channelward encroachment.

(E) (1) THE BOARD MAY NOT APPROVE A LICENSE OR AN AMENDMENT TO A LICENSE AUTHORIZING THE DREDGE MATERIAL DEPOSITED IN THE HART-MILLER ISLAND DREDGED MATERIAL CONTAINMENT FACILITY TO EXCEED AN ELEVATION OF:

(I) 44 FEET ABOVE MEAN LOW WATER MARK IN THE NORTH CELL; AND

(II) 28 FEET ABOVE MEAN LOW WATER MARK IN THE SOUTH CELL.

(2) ON OR AFTER JANUARY 1, 2010, THE BOARD MAY NOT APPROVE A

LICENSE OR AN AMENDMENT TO A LICENSE AUTHORIZING THE DEPOSIT OF **DREDGE** MATERIAL AT THE **HART**-MILLER DREDGED MATERIAL **CONTAINMENT FACILITY**.

[(c)] (II) Any person who violates any provision of this section is guilty of a misdemeanor. Upon conviction, the person is subject to a fine not exceeding $1,000 with costs imposed in the discretion of the court.

SECTION 2. AND BE IT FURTHER ENACTED, That the Maryland Department of Transportation and the Department of Natural Resources, in consultation with the Baltimore County government, shall hold at least two public meetings to receive public input on the development of the **Hart**-Miller Island Dredged Material **Containment Facility** as a park and recreational **facility**. After the public meetings, the Department of Transportation and the Department of Natural Resources, in consultation with the Baltimore County government, shall enter into a memorandum of understanding or agree to an amendment to the existing memorandum of understanding concerning **Hart**-Miller-Pleasure Island by December 30, 1997 on a concept plan for the

development of the south cell and the north cell of the **Hart**-Miller Island Dredged Material **Containment Facility** as a park and recreational **facility**. The memorandum of understanding or an amendment to the existing memorandum of understanding shall include concept plans for habitat restoration and recreational facilities, time lines for completion of the concept plans, construction plans and construction, and the State agencies responsible for implementing and funding the plans. The memorandum of understanding or the amendment to the memorandum of understanding shall provide that the development of the south cell will be substantially completed by July 1, 2002 and the development of the north cell will be substantially completed by July 1, 2013.

SECTION 3. AND BE IT FURTHER ENACTED, That this Act shall take effect

July 1, 1997.